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THEATER NUCLEAR FORCES

FRANCE

PRESIDENT ANNOUNCES DEVELOPMENT OF TWO NEW WEAPONS

Paris AIR & COSMOS in French 5 Jul 80 p 27

[Article: "Mobile Strategic Missile Launcher and Enhanced-Radiation Weapon Capture Headlines in France"]

[Text] At his press conference in the Elysee Palace last week, the chief of state furnished new particulars on French defense policy orientations, and particularly on two options open to France for enhancing the capabilities of its deterrent force in the next 20 years. The first is a mobile launcher for strategic missiles, designated the SX, and expected to supplement the strategic naval force's capabilities after 1992. The second is the process of developing an enhanced-radiation weapon, a process that is now well underway.

Such were the two important new announcements made by the President of the Republic who also made a point of reiterating "that any nuclear attack upon the soil of France would automatically provoke a nuclear response."

Those passages of President Giscard d'Estaing's press conference dealing with defense issues are quoted in extenso below.

"Nuclear deterrence is a beam of threats, a beam of risks, directed at the adversary, and at least one of which is deadly.

"Where the use of nuclear weaponry is concerned, there are all sorts of possible situations and hypotheses. We are not here to list them. But there is one central point in our defense posture. It is the point that any nuclear attack upon the soil of France would automatically provoke a strategic nuclear response.

"At the present time, we have strategic nuclear armament based on three components. This structure will remain valid until 1990-1992, with the introduction of multiple-warhead ballistic missiles on our submarines beginning in 1984-1985. As of 1992, we face the problem of replacing certain components of our strategic nuclear weaponry. That is why a

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decision was made, during the most recent meeting of the Defense Council, to undertake preparation of a mobile strategic launcher. Technical decisions on this launcher's characteristics could be made before the end of the year.

"With reference to the enhanced-radiation weapon, at a December 1976 meeting of the Defense Council, I made the decision to conduct a feasibility study of the enhanced-radiation weapon. These studies resulted in preparation of the weapon.

"The first tests have been conducted. The production decision could be made by 1982-1983, in this weapon's present configuration. Or 2 years later if a different configuration is desired. The decision to be made then will have to take account of the foreseeable status of nuclear weapons in Europe at that time.

"With regard to the question asked me about employment of the weapon, I would remind you that there are 5,000 tactical nuclear weapons in the West at the present time. The particular question of the employment of French tactical nuclear weapons is, therefore, not the only question in this connection facing the Federal Republic of Germany, far from it.

"When considering employment of that weapon, we shall take into account the following basic fact: France is directly concerned with the security of neighboring European states."

The chief of state replied as follows to a reporter who asked him to clarify this last sentence: "As a matter of fact, that statement's value lies in its remaining just as it is.... In statements on defense, and in particular precisely on the employment of certain means of defense, there is some information that has to be given in a form that allows the potential interlocutor to personally ask himself a certain number of questions."

It will be noted that the president of the Republic made no mention of a tactical nuclear weapon as successor to the Pluton, or of a "piloted" component likely to succeed the Mirage 4 bomber for strategic missions.

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THEATER NUCLEAR FORCES

FRANCE

DECISION TO DEVELOP NEUTRON BOMB CRITICIZED

Shift in Defense Policy

Paris LE NOUVEL OBSERVATEUR in French 5 Jul 80 pp 24-27

[Article by Josette Alia: "A-Bomb, H-Bomb, N-Bomb, How Valid Is the French Shield?"]

[Text] Some call it the "bath of death." It has nothing to do with the Ferris wheel, the "infernal river," or any other carnival or amusement park attraction. This bath of death is very real. It is nuclear, conceivable, programmable, and even programmed. It will be a reality by 1985 at the latest, or with a bit of luck, by 1982. What is it all about? It will be quite simple. A neutron bomb--also called an enhanced-radiation bomb, a nuclear antitank bomb, or the "respectable N-bomb" by its more ardent supporters--will burst above your heads at a height of 1,000 meters.

At a height of exactly 1,000 meters. Any higher than that and it would have no effect. It would be reduced to merely a brief flash in the sky. A lower height of burst would cause too much damage and could blow one or two houses to bits. But at 1,000 meters, the effect is perfect. The released neutrons radiate earthward where three possible things can happen to you. If you are directly under the burst, you receive, within a 300-meter radius, a radiation dose of 8,000 rads. You become totally paralyzed in less than 5 minutes and die within 2 days. If you are within a 660-meter radius of ground zero, the weapon will "deliver" on you--to use the military jargon--a dose of 3,000 rads. You will remain paralyzed for only 30 minutes, but you will die in 4 or 5 days for sure. If you are inside a 1,200-meter radius, you will receive a dose of 650 rads. Physical disorders will occur in the first two hours followed by death in 6 weeks if you have had medical care and treatment.

To be explicit, in the first two cases you will feel lethargic and dizzy and have convulsions and fainting spells before dying. In the third case, your slow, lingering death will be accompanied more by intestinal disorders. Nevertheless, you will have one consolation: in all three cases, your living room, your bedroom, or the geraniums on your balcony will not be damaged.

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To be even more explicit, if you are a civilian, and if you are allowed enough time, you will be able to take adequate shelter. The best protective materials are, in descending order of effectiveness: water, earth, and concrete. If, on the other hand, you are a soldier and are advancing on foot, in a truck, or even in a tank, you are an ideal target and will be literally vitrified. Neutrons do, in fact, have the strange property of piercing the finest armor more readily than a sack of dirt. The "nuclei" of heavy materials are few in number and far apart, thus allowing neutrons to pass through quite easily. In contrast, neutrons are slowed down and then quickly stopped by the "nuclei" of light materials such as water or earth.

Hence neutrons kill people without destroying equipment and the entire environment. This is an unprecedented advantage whose true value is evident to military experts, and one whose full import all Frenchmen must accurately assess from now on. For the president plainly told us Thursday that France now has the capability of producing N-bombs. Studies were begun in secret at the Atomic Energy Commission in December 1976. Secret underground tests were conducted at Mururoa from 1978 to 1980. Today, the scene is set and the first act is about to begin. The first series of small N-bombs could be produced by 1982, or by 1984-1985 if we wait until a more sophisticated model is developed. The project will, of course, have to be approved by parliament. But inasmuch as the president and the general staff are in agreement, it can be assumed that such approval is already a foregone conclusion. After the A-bomb, the H-bomb, and the Pluton tactical nuclear missiles delivery system, we are soon going to add a newcomer to our nuclear arsenal, one about which we still know very little, namely the N-bomb.

Some 20 Minutes of Computation

The bomb's discovery was due to two chance circumstances. In 1943, at MIT in Boston, a young man was taking a nap instead of attending an electronics class, when he was suddenly and unceremoniously awakened and led away by a hurried sergeant. The latter had been ordered to round up a few students in the dormitories or cafeteria and bring them to work in the Manhattan Project at Los Alamos where the first American atomic bomb was being fabricated in extreme secrecy, and where there was a lack of both technicians and manpower. This young man, Samuel Cohen, had, somewhat abruptly, found his vocation. He would become an atomic scientist.

The second chance circumstance occurred in the summer of 1958. Cohen was then a member of a USAF committee studying technological prospects for tactical nuclear weapons. In one of the nuclear laboratories he was visiting he asked researchers to outline for him their most "revolutionary" ideas. They spoke to him about an H-bomb detonator that would no longer be a polluting explosive--like the miniature A-bomb still currently deployed--but a "clean" explosive without blast and thermal radiation. Samuel Cohen pondered their comments. If a "clean" explosive could be found, it should also be possible to make a "clean" bomb, in other words, a bomb whose blast

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and heat would be reduced to a minimum while still retaining the same neutron radiation. On the basis of the established data for the detonator, he made some computations "during 15 to 20 minutes," to quote Cohen himself, and concluded that the new bomb would be based on fusion (like the H-bomb) and not fission (like the A-bomb.) It would release 80 percent of its energy in the form of a flow of high-speed neutrons and only 20 percent in the form of blast and heat. If detonated high enough, the blast and heat would be eliminated and the neutrons would induce no dangerous radioactivity in the soil. They would now have but one effect. They would affect humans, highly sensitive to nuclear radiation. And it would kill them but within a reduced surface area and on condition that they are exposed.

Thus the neutron bomb was born. But we had to wait nearly 20 years for it to get to us. Because of its inordinately limited radius of destruction, the bomb did not interest the Americans. In the 1950's, the Soviets announced the start of a research program on "pure" fusion. Then they became silent. Did they find it? Samuel Cohen is now convinced they did. But their conventional military superiority in Europe--the only possible zone of action for these weapons with a small destructive radius--is such that the Soviets have probably not developed it. All things considered, the only ones who could be interested in the new weapon are the Europeans. Or rather the French, because they alone, outside of NATO, have the capability of taking the nuclear initiative. Samuel Cohen was able to patiently convince France. A CEA [Atomic Energy Commission] scientist, Robert Dautray, worked first on the H-bomb and later on the tricolor neutron bomb that is now waiting final approval to increase and multiply.

The N-bomb is not large. It weighs 200 kilograms and is a few meters long. Is it expensive? Impossible to say, because everything depends on the number produced, as is the case with peas. "On the average," according to the military, the N-bomb should cost about as much as a conventional tactical nuclear missile. It can be transported by ship, submarine, aircraft, and truck, be mounted on a wheeled or tracked vehicle. Its delivery means include artillery shells and missiles carrying one or more warheads. In short, it is the "pocket" atom. An economical atom too: a small 1-kiloton N-bomb can "wipe out" the same surface area as a big 10-kiloton A-bomb. But it does so more "cleanly," as we have mentioned, because instead of burning, crushing and exposing everything to nuclear radiation, it "only" kills people.

This portable, economical, selective, and controllable atom delights the general staffs, particularly the army staff which has had to keep its hands off the prestigious strategic weapons and the Pluton missiles, and which definitely would like to "play" a little with this amazing atomic artillery. In Major headquarters, enthusiastic officers list all of the new weapon's advantages. It is unquestionably useful in offensive operations: employing it in a surprise attack, enemy outposts could be neutralized with bursts of radiation and our troops could move in quickly and occupy these positions without any danger. With the battlefield thus secured, we could put the

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undamaged economic resources back in operation, and make use of the enemy's weapons (once the corpses have been removed from the tanks). The neutron bomb's advantage is even more obvious in defensive operations. To attack, the enemy naturally has to advance. He then becomes vulnerable, and his tanks, even if quite numerous, can be quickly immobilized, like empty hulls, by the neutron weapons fired by defensive forces carefully shielded and protected in bunkers.

There are some persons who almost go so far as to say that, after all, this bomb is moral, in that it kills only soldiers and spares civilians, if only adequate shelters are ever built for the latter. We now see this "respectable N-bomb" being embellished with all sorts of sterling qualities. Indeed, how have we ever been able to live so long without it? Our defense was defective. There was a gap in it. Today, that gap has at last been filled. Moreover, the Soviets have the N-bomb, the Americans too. So we also must have it, as a precaution. Even if we have to stow a whole batch of small N-bombs in the "cupboard," in reserve.

When speculation reaches this inordinate level, we must stop, cool all this enthusiasm, and ask that a hard look is taken at the way these weapons would be employed. For these toys are nuclear. And nuclear weapons have their hard and fast rules, rules not of combat but of deterrence which is the absolute contrary of battle, because the objective of deterrence is, in fact, to prevent adversaries from waging war against each other.

'Expanded Deterrence'

Yet doesn't this new weapon's necessarily ambiguous character--usable on the battlefield as conventional artillery and at the same time as nuclear artillery--imply a serious shift in what was and, in principle, still is French defense policy? Let us review the major principles and stages of that policy. When France initially possessed only the A-bomb, General De Gaulle set forth his theory of the "sanctuary" and "all or nothing." This meant that any attack, whatever it may be, against the French "sanctuary"--defined by a "vital critical threshold," i.e. continental France proper--would trigger a nuclear response. Subsequently there was a diversification of France's nuclear weapons. The country's nuclear arsenal grew in quantity, quality, and megatonnage: H-bomb, undetectable submarines capable of delivering a second strike or "deadman's strike." The policy was modified. This time it no longer called for a strategic nuclear strike in response to "any attack" against France but also to any attack against France's "vital interests." Where do these vital interests lie? Still within continental France proper? Or elsewhere, on its fringes?

This ambiguity increased with the deployment of the first tactical nuclear weapons, the famous Pluton missiles, action that provoked a storm of controversy. Where should they be deployed? In France? Their warheads would fall on Germany, and furthermore, it would be quite late to have them intervene effectively if we were to wait until enemy armies were 100 kilometers

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from the Rhine. Why not position them in a "chink" in the "forward area," in other words, in Germany, of course? De Gaulle settled the question, and Debre maintained that the Pluton missiles would stay in France but would act as a minefield, as a "supreme warning" given the enemy before opening French nuclear fire that is now capable of destroying 150 Soviet cities with its 75 megatons of firepower.

Nevertheless, the French deterrent's range of application began imperceptibly expanding. With Giscard's assumption of the presidency, this expansion became institutionalized. In 1976, in a speech at the National Defense Institute for Advanced Studies (IHEDN), the president spoke, for the first time, about "expanded deterrence." A year later, Prime Minister Raymond Barre, speaking at the Mailly military training camp, elaborated upon this same concept. This time, he clearly placed France's vital interests at the "approaches" to France's national territory, in other words, among its "neighbors and allies." Was this a lapse? Nobody knew at the time that research on the neutron bomb had already been actively underway for 6 months. A new weapon system demanded a new policy. When Valery Giscard d'Estaing announced, last Thursday, that France practically had an enhanced-radiation weapon, everybody expected him to define the N-bomb's role in France's overall nuclear posture. Otherwise all speculation would be permissible and French deterrence, in its entirety, might be weakened thereby.

Yet the president gave no such details. He made merely two key statements, one unintentionally obscure, the other deliberately enigmatic. The first statement was: "Any nuclear attack upon the soil of France would automatically provoke a strategic nuclear response." Seated in front of his television screen, the average viewer wondered: "Does this mean that we do not release the bomb if the attack is not nuclear, if Soviet tanks sweep forward in an altogether conventional manner? But if such is the case, what do we do?" It was all a misunderstanding, however. Upon questioning a reliable source, we learned that by this statement the president actually wanted to respond to those persons who had ventured to question his determination to push the red button, and reply particularly to General Gallois who had mentioned the case of a "surgical" type of nuclear attack, such as, for example, the pinpoint destruction of the missiles based on the Albion Plateau. "Yes indeed," Giscard had wanted to reply, "even in that case, I would launch our strategic nuclear weapons and would issue orders to go all-out."

No More Red Lines

The second key statement was by far the more important. In nuclear matters, "France," he said, "is directly concerned with the security of neighboring European states." If this means the "sanctuary" is expanded to include France's neighbors and French strategic nuclear firepower protects them, then French deterrence is no longer at all credible. Can you imagine Frenchmen ready and willing to let themselves be vitrified for the defense of the Elbe River boundary? If this simply means that tactical nuclear weapons, and the neutron bomb in particular, will henceforth be employed on German

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soil, then we have entered into a system which no longer has anything Gaullist about it. This would mean that France, confident in the power of its new weapons, its brand new and impending neutron artillery, had agreed to wage the forward battle outside the "sanctuary," with nuclear weapons, a battle that would obviously be fought on the Elbe rather than on the Rhine. But this battle--which De Gaulle had always obstinately refused to consider waging because of the disproportion in forces--can it be won? Probably not. And what then will become of the clearly posted strategic thresholds, the red lines proclaiming: "Crossing over this line is prohibited?" For the adversaries as well as the experts, the indispensable signs appear blurred and confusing.

Officials in the Defense Ministry and also in the Elysee Palace readily hasten to explain: "But no, come now, nothing has changed. The neutron bomb will be merely a warning bomb, but one that is more improved and hence more credible than conventional tactical nuclear weapons. What is more, it will give Giscard what he now lacks most, namely time to reflect. As a matter of fact--let's be specific!--what can actually happen on the battlefield? The answer is well-known. Everybody has a mental picture of a large-scale advance with some 30,000 Soviet tanks sweeping westward in the traditional two separate waves. The first wave having been 'irradiated' by the N-bomb and stopped, we will have time to see if the second wave goes into action, and consequently Giscard, in his bunker, will have a few additional hours to ponder the situation before pushing the red button." Maybe. I am no strategist. After all, the Soviets could abide by the rules of the game established by our general staffs.... But this brilliant argumentation does not convince everyone. The communists are, naturally, violently opposed to it. The socialists are divided in their opinion. The Gaullists are hesitant and waiting. Waiting for what? Proof of the artful treachery they suspect. Proof that Giscard is making his way, gradually but surely, toward what he has been dreaming of for years, namely a European-scale defense that would come up to our president's monarchical expectations but inevitably bind the French deterrent to NATO. That would mean the end of the nuclear independence achieved by De Gaulle. But what can the Gaullists do? Invoke the General's shadowy figure once again? There's no doubt about it, the Cross of Lorraine is a heavy cross to bear these days.

Less Deterring Than Pluton

Paris LE NOUVEL OBSERVATEUR in French 5 Jul 80 p 25

[Interview with Pierre Messmer, General De Gaulle's former defense minister; date and place not given]

[Text] [Question] If France decides to produce the neutron bomb, will that strengthen its nuclear capability and enhance the credibility of its deterrent?

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[Answer] No, because the enhanced-radiation weapon is a weapon that, in my opinion, does not belong to the deterrent or to the nuclear arsenal, whether it be strategic or tactical. In fact, it damages only humans and has a very limited range of destruction. Consequently, if anything, it is less deterring than the present tactical nuclear warhead delivered by the Pluton missile. I even believe it strips the Plutons of part of their effectiveness.

[Question] It is not, however, a so-called "conventional" weapon, inasmuch as it utilizes the process of nuclear fusion.

[Answer] Actually it represents the first real intermediate between the two weapon systems, nuclear and conventional. But the nuclear aspect is not the overriding consideration, because the definition of these weapons is ultimately determined by the use made of them. Now the neutron bomb is usable solely on the battlefield as a kind of atomic artillery. Indeed that is why the army is so anxious to get it. But you will see that the first problem to arise will be determination of the conditions under which this new weapon shall be employed.

[Question] Doesn't this ambiguous character of the neutron bomb completely challenge the validity of the Gaullist policy on deterrence?

[Answer] Possibly so. It's obvious that the very existence of a new weapon necessitates a tactical change, at the very least.

[Question] When this issue comes before parliament, will you vote for or against the neutron bomb?

[Answer] That depends on the effects its development will have on other types of weaponry. If its overall cost is high, if to produce it in large numbers requires slashing nuclear programs we consider to be priority programs, then, yes this will create a problem for us.

Heightened Risk of War

Paris LE NOUVEL OBSERVATEUR in French 5 Jul 80 p 26

[Commentary by Georges Sarre, member of the Socialist Party's executive committee and the European Parliament: "Peace Through Deterrence or Neutron War?"]

[Text] Integration into the Atlantic community and the cohesion of that community are being achieved at an increasingly sustained rate. If there is any one result of the president's 7-year term of office that is hardly debatable, it is definitely this integration. Under these circumstances, how can anyone be surprised at seeing Giscardian tactics now turn to attacking the hard core of our defense system?

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The government's recent decision in favor of the neutron bomb is indicative of the magnitude of the reversal made in policy.

The purpose of the deterrent force, independent of the blocs, is to prevent a battle of Europe. By the threat of substantial retaliation, this force can prevent the two superpowers from using European territory as a theater of operations.

Contrastingly, the doctrine of flexible response is based on a conventional clash followed by a nuclear conflict limited to Europe. It means transforming this region into a battlefield whose boundaries and scope would be determined solely by the superpowers. The allies would become vassals before serving as hostages. This is the NATO theory for the defense of American interests. It cannot be ours.

Deterrence is, first and foremost, a weapon of denial. It is by no means a new Maginot Line. And this is so for at least two reasons. First of all, what the experts call "the uncertainty of the threshold of deterrence" prevents a potential aggressor from speculating about the stage at which France could deem its vital interests to be at stake. Secondly, by making the battle of Europe impossible, the independence of our deterrence capability is a stabilizing factor for the whole continent.

In complete contrast, the neutron weapon expresses deliberate acceptance of the battle of Europe. It is no longer a question of preventing that battle but of preparing for it. It is a terrifying weapon because it renders nuclear war in Europe possible.

Proponents of the neutron weapon argue that it is the best means of stopping Soviet tanks. To begin with, this argument limits its consideration to a very old view of the dangers we face and overlooks the fact that the origin of the threats is no longer so localized. By "sanctuarizing" Soviet and American territories, the SALT accords and the agreement on prevention of thermonuclear war are a better indication of the major risk of our times, namely the use of European soil as a possible theater of confrontation. And the neutron weapon is not only powerless to ward off this threat, it also helps make it more likely.

The fact is that the neutron weapon can be of interest only to somebody outside Europe. Such is the case with the United States or the Soviet Union, both of which would rather have anything other than a thermonuclear clash over their territory. This is clearly why neutron weapons can actually be deployed only within the NATO framework, in the framework of that "unique battle space" referred to by Giscard d'Estaing. Accepting the neutron bomb is, therefore, tantamount to increasing our dependence on the Pentagon.

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The President of the Republic's statements opened people's eyes: the problem is no longer one of mastering the bomb's technology, but a question of whether these weapons are to be deployed. This decision entails serious consequences not only for our defense policy but for our relations with the two blocs. Choosing to prevent the battle or to prepare for it is another way of encouraging detente or the cold war.

There will be no socialist experiment in France without detente. Tension and confrontations have their own logic that militates against the people's cause by inciting everyone to rally to his protector's side.

Hence it is incumbent upon us to resist this involvement that would preclude any socialist solution not only in France but also in Europe.

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THEATER NUCLEAR FORCES

FRANCE

STATUS OF STRATEGIC, TACTICAL NUCLEAR FORCES IN 1980 DESCRIBED

Paris AIR & COSMOS in French 12 Jul 80 pp 63-64

[Article by Jean de Galard: "French Strategic and Tactical Nuclear Forces in 1980"]

[Text] Strategic Forces

France's strategic nuclear forces are currently organized into three components:

- a. The piloted aircraft component composed of Mirage-4 strategic bombers carrying a 70-kiloton A-bomb;
- b. The strategic ballistic surface-to-surface (SSBS) missile component consisting of missiles based in underground silos on the Albion Plateau ("yesterday": 18 S-2 missiles; "today" 9 S-3 missiles; "tomorrow": 18 S-3 missiles);
- c. The strategic naval surface-to-surface (MSBS) missiles, 16 of which--currently all M-20's--are carried by each of the fleet ballistic missile submarines (SSBN).

Strategic Air Force (FAS)

The first two of these components are French Air Force elements. Both are assigned to the Strategic Air Force Command (CFAS). The Mirage-4 bombers became operational in May 1964, the SSBS missiles in 1971. The Strategic Air Force is responsible for the operational readiness and employment of the Mirage-4 bombers (refuelable in flight) and the silo-based Albion Plateau missiles. The FAS commander, currently Major General Jean Saulnier, has the mission of maintaining all of these forces--personnel and equipment--in the best possible readiness condition so that they can be ready for the chief of state's use at any time.

Indicative of this readiness is the fact that a large part of these forces are kept in a round-the-clock ground alert status throughout the year.

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The Mirage-4 weapon system consists of the bomber, the nuclear weapon it carries and the C-135F tanker. This system, whose three elements are definitely aging--the Mirage-4 made its maiden flight in June 1959--is deployed in three wings, two bomber wings and an aerial refueling wing. Each wing is organized into three squadrons. To reduce their aircrafts' vulnerability on the ground, the squadrons are dispersed among bases at Cambrai, Creil, Luxeuil, Saint Dizier, Avord, Bordeaux, Mont-de-Marsan, Istres, and Orange.

Each squadron is responsible for the employment of its assigned aircraft and compliance with alert provisions. To accomplish these tasks, it has some dozen crews: pilots, navigators, and the mechanics responsible for routine servicing of the aircraft. The Mirage-4 squadrons are supported by their own Special Ammunition Storage Depot (DAMS) which maintains, stocks, and assembles the nuclear weapons and also mounts them under the fuselage of the aircraft.

A total of 62 Mirage-4's were built, and 47 of these are still in service with 36 of them kept operationally ready at all times.

The operational readiness of all FAS personnel and equipment and the level of training of air crews are evaluated in monthly exercises called Poker and also in an annual maneuver called Fantasie.

The Albion Plateau missiles are in underground silos dispersed in sites around the main base of Saint Christol. These sites are manned by the 1st GMS (Strategic Missile Group) which also includes protection and security units plus technical units based at Saint Christol and responsible for periodic maintenance and repair of the missiles, and loading them into the silos.

There are two groups of nine silos each. Each group is linked to its own launch control center (PCT) located deep underground. To make the SSBS invulnerable and thus ensure their ability to respond effectively to any nuclear attack, all sites and PCT's have been constructed in accordance with very strict protection and survival requirements. They are so effectively hardened against nuclear attack that their neutralization would require simultaneous attack on 20 different targets, each attack with several weapons. Thus their neutralization seems hardly conceivable at the present time.

The headquarters of the Strategic Air Forces Command is currently located in Taverny. In an emergency, or if necessary, the Mount Verdun Base near Lyon will house the FAS command post.

Strategic Naval Force (FOST)

The third component of the strategic nuclear forces, FOST, was activated in 1972. It is commanded by an admiral--currently by Admiral Pieri--who

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also commands the attack submarines. FOST comprises five nuclear submarines: Le Redoutable, Le Terrible, Le Foudroyant, L'Indomptable, and Le Tonnant. The commander FOST is under the operational command of the armed forces chief of staff. The commander FOST's responsibility to governmental authorities is the same as that of the commanding general FAS. Under the commander FOST's authority, the commander of the SBN fleet and the Ile Longue operating base near Brest has the mission of maintaining personnel, equipment, and SSBN's operationally ready.

The commander FOST is stationed in Paris. The FOST's operations command post is at Houille, Department of Yvelines, in a compound housing the Mille Communications Center, the transmitting facilities for the Navy's master communications system.

This command post is hardened against nuclear attack. It houses the FOST staff and facilities enabling it to maintain continuous contact with the SSBN's on patrol via a large number of communication nets. The organization's main element is the Rosnay high-powered, very-long-wave station, most of whose key facilities are underground. It must be noted, however, that radio silence from ship to shore is rigorously enforced.

SSBN's in service operate in a series of cycles. Each cycle consists of: an 8-10 week patrol at sea, including a short trial and training phase followed by the operational patrol proper; upon return to port, a 4-5 week period during which the submarine undergoes necessary repair and maintenance at Ile Longue. Each SSBN has two crews. After one crew completes a patrol, it is replaced by the other. The oncoming crew assumes responsibility for the SSBN's security, assists in its repair and maintenance at Ile Longue, and then takes the submarine out on another patrol. The first crew spends 5-6 weeks in a "fresh-air recuperation and rehabilitation" facility before being granted shore leave. Upon expiration of this leave, crew members undergo about 6-weeks of training at the Rouche-Douvres Center in Brest before going back on patrol.

When at sea, the SSBN's are under the direct operational control of the commander FOST. The Ile Longue Naval base is responsible for the protection, maintenance, and repair of each SSBN's equipment, missiles and warheads.

Tactical Nuclear Force

The Tactical Air Force's (FATAC) Mirage-3E and Jaguar aircraft are armed with the AN-52 tactical nuclear bomb. FATAC's present commander is Lieutenant General Michel Forget. FATAC has its headquarters in Metz. Early next year, the naval air arm's Super Etendard aircraft based on the carriers Clemenceau and Foch--recently refitted to carry and stock AN-52's--will also be armed with these tactical nuclear weapons. A total of 42 Super Etendards have been delivered to date. Full delivery is scheduled to be completed in 1981.

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FATAC currently has four nuclear squadrons, two at Saint Dizier and two at Luxeuil. A fifth squadron is to become operational shortly at Istres where there is already a Special Ammunition Storage Depot (DAMS) for the Strategic Air Force. These four squadrons undergo intensive training throughout the year. In addition, they participate in the annual Centaure Cup, a competitive exercise always conducted under the most realistic conditions possible.

The army also has a tactical nuclear capability with its five Pluton regiments. The Pluton missile system is mounted on an AMX-30 tank chassis. The five regiments are stationed as follows: the 3d RA [Artillery Regiment] at Mailly, 15th RA at Suippes, 4th RA at Laon, 74th RA at Belfort, and the 32d RA at Oberhoffen. Each regiment is organized into three firing batteries. Each battery has two launch vehicles. The launch vehicle constitutes the fire unit. Each Pluton regiment has a missile support and supply unit and in peacetime operates its own missile depot. The regiment's substantial organic transportation gives it a highly flexible operational deployment capability. A Pluton regiment is employed at corps artillery level.

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THEATER NUCLEAR FORCES

FRANCE

NUCLEAR WEAPONS CHOICES FOR 1980-90 EXAMINED

Paris AIR & COSMOS in French 12 Jul 80 pp 59, 61

[Article by Pierre Langereux: "New French Nuclear Choices for 1980-90: Strategic Mobile Missile and Tactical Neutron Weapons"]

[Text] The president of the republic recently disclosed the "new French nuclear choices" made by the Defense Council at its 10 June 1980 meeting in the Elysee Palace.

These choices are simple. The strategic choice calls for replacing certain components of the FNS [Strategic Nuclear Force] in 1992. Specifically, the Mirage-4 bombers are to be replaced by the "new component," namely a strategic mobile missile for which there are two competing concepts: the SX land-based missile and the cruise missile in its air-launched or ground-launched version.

The tactical choice is the neutron weapon.* Under development since 1976, this weapon has already completed successful tests. It could be placed in production by 1982-83 in its present configuration or by 1984-85 in an improved version.

Does this tactical and technical choice also mean a shift in the French strategy of deterrence, a change characterized by expansion of the national "sanctuary" beyond France's borders? In this connection, the president did state that France is directly concerned with the security of the neighboring European states." There are some who will view this at least as a manifestation of Atlanticism. Others will see it as a downright renunciation of the policy of strict independence in favor of a participation of sorts in a possible "forward battle" (with employment of tactical nuclear weapons). Both of those views are being criticized in French political circles.

*Technical experts insist the neutron weapon is not a "bomb." It is also known as the "enhanced-radiation weapon" or "limited side-effects weapon."

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To carry this analysis of new French nuclear ambitions any further, we will have to wait, however, until either the "more detailed" answer the president plans to give "on the entire spectrum of defense considerations and concern," or the National Assembly debate on defense issues, a debate promised by the chief of state.

This debate is especially awaited in that Valery Giscard d'Estaing has himself said that "the defense effort...inevitably affects all Frenchmen."

Moreover, it does seem that by these words the president wanted to criticize Frenchmen for showing a certain "disinterest" in anything related to defense.

Such unconcern appears to be reflected in a May 1980 public opinion poll. According to that survey, 50 percent of all Frenchmen do not believe the president would order a retaliatory nuclear strike (24 percent believe he would), and 72 percent are even opposed to France's use of nuclear weapons (29 percent favor such use).

The chief of state reminded the 50 percent who thus question his "credibility" that "any nuclear attack on the soil of France would automatically provoke a strategic nuclear response."

Unfortunately, while this assertion is meant to be reassuring, it is also disquieting. Indeed, what would the government's attitude be in the event of a non-nuclear attack, such as, for example, an invasion by tens of thousands of Soviet tanks? Wouldn't the deterrent weapons be used in that situation? It does appear, however, that all this confusion is much ado about nothing and that the president simply "sinned by omission." If we can believe the "information obtained from a reliable source" by a weekly magazine (LE NOUVEL OBSERVATEUR, 5 July 1980) after the presidential press conference, Valery Giscard d'Estaing had no intention of limiting the deterrent's application. It should be understood, therefore, that "any attack" against the national sanctuary will be penalized by nuclear fire-power. But why did not the president specifically say so? This certainly deserves to be said in the clearest possible terms!

The president was contrastingly much more specific in his disclosures about the future status of our strategic and nuclear weaponry over the next 20 years.

The Strategic Nuclear Force (FNS) currently has three "components": an air component consisting of Mirage-4 bombers, a land-based component with the SSBS [strategic ballistic surface-to-surface] missiles, and a naval component with the SSBN's [fleet ballistic missile submarines] carrying the MSBS [naval strategic ballistic surface-to-surface] missiles. The president clearly stated this organizational structure would remain valid until 1990-92, with one notable improvement, however, "beginning in 1984-85," namely "the deployment of (M-4) multiple-warhead ballistic missiles on our submarines"

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Hence the French "triad" will be retained--but with some improvements--for another 12 years. Then it will be modified.

Valery Giscard d'Estaing explained that "the problem of replacing certain components of our strategic nuclear armament would arise in about 1992."

Actually this problem is one of replacing the Mirage-4 bombers--armed with AN-22 bombs--which are to be withdrawn from service in 1985, except for 15 of these aircraft that will remain in service temporarily and be armed with the new medium-range air-to-surface tactical missile, the ASMP. Is this problem also a longer-range one of replacing the SSBS-53 strategic ballistic surface-to-surface missiles deployed in 1980-82?

The "manned bomber" strategic component is scheduled to disappear in the short-range future. In fact, the government's general delegate for armament announced in 1979: "It appears unlikely that the Mirage-4 will have a successor in its strategic bomber role" (ARMEMENT, 5 March 1979).

The land-based component is also destined for replacement at some future date. But deployment of strategic missiles on our national territory will go on as a continued indication of the territory's "sanctuarization."

The manned bomber component will thus be replaced in 1992 by what French strategists are now calling the "new component," and no longer the "third component." This would apparently indicate that the triad has seen its day. Yet the defense minister, speaking in Apt on 23 May, again asserted that "the three components are complementary." Regardless of what all this may mean, the naval component (SSBN and MSBS) is certainly going to be retained and even improved because it is intrinsically "invulnerable" for at least another two decades, according to the strategists.

The aforementioned "new component" will be primarily "mobile." In this regard, the president revealed that the 10 June 1980 meeting of the Defense Council had approved "preparation" of a "strategic mobile launcher." Although he gave no further details about this launcher, Valery Giscard d'Estaing did announce that "firm technical decisions on this (mobile) launcher's characteristics could be made before the end of the year." In our view, this is by no means certain, inasmuch as project planning will probably still not have reached a stage sufficiently advanced to permit a decision of this importance to be made, a decision determining the future of our strategic nuclear armament for a period of 20 years.

There are, in fact, two projects competing for acceptance as the new strategic mobile component, the mobility of which will actually not be permanent but rather "semipermanent," in other words, proportionate to defense alert or warning conditions, i. e. slight mobility in peacetime and increased mobility in time of emergency.

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One of these projects is the SX strategic ground-launched missile mounted on wheeled vehicles (trucks).

The other project is the strategic cruise missile. It could be deployed as either a ground-launched weapon like the SX (truck-mounted), or as an air-launched weapon (from aircraft). These two projects are still competing with each other at the present time. No choice has yet been made by either the technical services or government policy makers. Yet this choice could be made before the end of 1980, as the chief of state himself has announced. Four main criteria will guide officials in choosing between these two projects: mobility, of course, but also vulnerability and ability to penetrate enemy defenses, plus, naturally, the cost of each weapon system. The three possible options--ground-launched SX, air-launched cruise missile, ground-launched cruise missile--are obviously not equal as far as these criteria are concerned. It is difficult, however, to foresee which option the government will choose.

But the real "bomb" dropped by the president of the republic at his press conference was unquestionably the disclosure that France possessed the neutron weapon.

As a matter of fact, the president not only announced that 3 and 1/2 years ago "at a Defense Council meeting in December 1976" he had approved "conducting an enhanced-radiation weapon feasibility study," he also disclosed that "the first tests had been made." Up to then, this had been a well-kept secret.

The announcement that France had already tested a neutron weapon caused a stir in Washington where production of such a weapon was postponed by President Carter's decision of 7 April 1978. France is now, therefore, the third power, after the United States and the USSR, to have developed the neutron weapon.

Work on the French weapon has apparently reached a highly advanced stage. In any case it has made sufficient progress to allow the president to also reveal that "the production decision could be made by 1982-83 in the weapon's present configuration" (not explained) or "2 years later," hence in 1984-85, "in a different configuration."

In his press conference, the president issued two warnings about the production and employment of this neutron weapon, whose manufacture France can still temporarily "shelve," as was done in the United States.

The first warning was that the decision on production of the neutron weapon "will have to take account of the status of nuclear weapons in Europe foreseeable as of that date." This statement obviously has reference to the strategic "balance" between NATO's "Euromissiles" and the SS-20 missiles of the Warsaw Pact which is planning to deploy 600 of these weapons.

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The second warning was that employment of the neutron weapon will take account of the fact that "France is directly concerned with the security of the neighboring European states." This statement obviously has reference primarily to Germany, the buffer territory between the USSR and France. Indeed, Valery Giscard d'Estaing's statements were rather well received in Germany where the Munich daily SUD-DEUTSCHE ZEITUNG said it felt sure that the French neutron weapon would be operational in 2 years. Furthermore, this Munich newspaper considered that the French nuclear strike force as a whole would be enough to make "even a superpower" think twice!

Moreover, this warning was very clearly noted and understood in Moscow where, 4 days after Valery Giscard d'Estaing's press conference, Leonid Brezhnev strongly pressed upon Chancellor Schmidt the necessity for Europe to relinquish the neutron weapon.

This is a sign that Moscow is not indifferent to such a weapon being deployed in Europe. The USSR had, in fact, previously proposed that the French--and British--nuclear forces be included in the next American-Soviet negotiations on strategic arms limitation (SALT II).

But the president of the republic has clearly stated, since 10 January 1979, that the French FNS is not negotiable!"

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THEATER NUCLEAR FORCES

FRANCE

DETAILS, MODIFICATIONS OF M-20 MISSILE DESCRIBED

Paris AIR & COSMOS in French 12 Jul 80 pp 65-67

[Article: "Five Operational SSBN's Currently Armed With M-20 Missile, First French Missile Carrying a Thermonuclear Warhead and Which Became Operational in 1977"]

[Text] The M-20 MSBS [Naval Surface-to-Surface Strategic Ballistic] missile armed with a thermonuclear warhead has equipped the Naval Strategic Force's (FOST) five operational submarines since April 1980. The M-20 is the third-generation version of the MSBS.

The first-generation MSBS--the M-1--entered into service on the nuclear submarine Le Redoutable in 1972. Since then, the system has been improved in two phases:

- a. A first phase designed to increase the missile's range. This resulted in equipping the nuclear submarine Le Foudroyant with the M-2 version in 1974;
- b. A second phase designed to arm the missile with a 1-megaton warhead and enhance its ability to penetrate enemy defenses. This resulted in equipping the submarine L'Indomptable with the M-20 version in 1977.

In developing these improved versions of the MSBS system, maximum effort was made to minimize any required changes to the submarine's on-board missile launch facilities and to the missile assembly and support installation at the Ile Longue Naval Base. Consequently in both the M-2 and M-20 versions, the missile's diameter and first stage were unchanged.

The M-20 is a two-stage ballistic missile carrying a thermonuclear warhead. It is equipped with improved penetration aids and has a range of over 3,000 kilometers. It weighs nearly 20 tons, is approximately 10 meters long, and has a diameter of about 1,500 millimeters.

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Its four main parts are: the first propulsion stage, the second propulsion stage, the equipment section, and the upper stage including the thermonuclear warhead.

The first-and second-stage propellants are of the isolane family, i.e. composite propellants whose basic ingredients are aluminum, ammonium perchlorate, and polymethane.

The first-stage (designated 904) casing is of 40CDV 20 SV high-strength steel. The rocket motor is equipped with four rotating nozzles that impart roll, pitch, and yaw control to the missile by differential commands. The first stage weighs 12 tons including more than 10 tons of propellant. The first-stage motor has a "bicomposition" charge with a star-configuration central conduit.

The second-stage motor has a phenolic resin-bonded glass fiber case manufactured by winding. The nozzle is fixed. Pitch and yaw control is imparted to the missile by injecting freon into the nozzle. The missile is roll-stabilized by two small steerable rockets. The second stage weighs 6.5 tons, approximately 5.7 tons of which is propellant. The second-stage motor has a "monocomposition" charge with a circular-section central conduit. The second stage is equipped with a thrust cutoff system (DAP) consisting of six thrust termination ports in the forward part of the motor.

The equipment section contains the three-axes inertial platform--manufactured by SAGEM [Company for General Applications of Electricity and Mechanics]--whose data are processed by the on-board guidance computer--produced by EMD [Marcel Dassault Electronics]--which generates steering commands and sends them to the flight control unit--manufactured by LCT [Central Telecommunications Laboratory].

The missile's upper stage has three main elements:

- a. The 1-megaton thermonuclear warhead with its casing enabling it to re-enter the atmosphere. This nuclear warhead is hardened against the effects of nuclear antiballistic missile (ABN) systems;
- b. The shroud designed to protect the nuclear warhead when traveling through the water and when leaving the atmosphere;
- c. The module containing penetration aids and sequencer equipment.

Missile Operations On-Board the Submarine

M-20 missiles are assembled and then loaded into the submarine at the Ile Longue operating base near Brest. In the submarine, a liner separates and insulates the missile from the inner tube which itself is suspended in the launch tube by a shock-absorbing system. Environment inside the tube is

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COMMISSIONING OF SSBN'S - THEIR VARIOUS MSBS MISSILES (as of June 1980)

NAME	DESIGNATION	START OF CONSTRUCTION	COMMISSIONED	PATROLS		MSBS MISSILES	
				First	Total No.	Initial	Current
First-generation SSBN's:							
Le Redoutable	611	1963	1 Dec 71	Mar 72	23	M-1	M-20
Le Terrible	612	1966	1 Jan 73	Jan 73	22	M-1	M-20
Le Foudroyant	610	1968	6 Jun 74	Early 75	15	M-2	M-20
L'Indomptable	613	1970	31 Dec 76	Early 77	13	M-20	M-20
Le Tonnant	614	1972	3 Apr 80	3 May 80	1	M-20	M-20
Second-generation SSBN:							
L'Inflexible		1978	Early 1985	1985	-	M-4	

STATUS

Le Redoutable - nearing completion of major overhauling
 Le Terrible - in operational cycle
 Le Foudroyant - in operational cycle
 L'Indomptable - in operational cycle
 Le Tonnant - in operational cycle
 L'Inflexible - under construction

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continuously controlled (temperature and humidity). Important missile safety and readiness parameters are constantly monitored from an electronic control panel associated with each missile. The missiles are subjected to periodic inspections and tests to check their readiness for possible launch. The most common of these tests is the simulated launch which is an identical reproduction of the real firing sequence, with the exception of its irreversible phases. Most of the malfunctions--which are very few, in fact--detected are repairable aboard the submarine on patrol because even the most complex items of equipment are replaceable. All inspection and test data are stored on data-processing media in very detailed fashion. After the submarine's return to port, these data are automatically processed, thus making it possible to detect any deviation and, if necessary, complete, any corrective actions taken at sea.

The launching proper consists of two phases:

- a. A preparation phase which begins upon receipt of the governmental order, and during which preliminary guidance data is computed and the missiles are made ready for launch;
- b. A launch phase during which the submerged submarine ejects a volley of missiles.

To be able to fire a complete volley in a very short time, highly reliable automatic systems must interconnect all items of equipment participating in the launch: the missile proper, electronic control panels, and launch tubes.

All of the electronic equipment in the delivery vehicle subsystem represents some 60 electronic panels containing more than 8,000 printed-circuit boards. The SSBN's total MSBS weapon system comprises the aforementioned subsystem's equipment plus the launch subsystem (tubes and associated equipment), and the data processing center (main computers).

Flight Phases

As soon as the missile has emerged from the water, its first stage ignites and develops a thrust of some 45 tons for 60 seconds.

After first stage separation, produced by explosive ejection of the inter-stage, the second stage ignites and generates a thrust of 30 tons for a variable period of time (up to 60 seconds) based on the desired range. During this flight phase, the protective shroud is jettisoned.

Then, after activation of the thrust termination system upon command of the guidance computer, the nuclear warhead (or reentry vehicle) continues its ballistic flight.

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ORGANIZATION, MISSIONS OF TRAINING FIGHTER WING

Paris LE MONITEUR DE L'AERONAUTIQUE in French Jul 80 pp 15-17

[Article: The 8th Fighter Wing"]

[Text] The 8th Fighter Wing (EC) has been based at Cazaux since 1964. It is organized into two fighter squadrons, a special-purpose equipment maintenance and repair group (the 15/008 GERMAS), a liaison and instrument flight section (ELVSV), and various support and service activities common to the two squadrons.

The Saintonge 01/008 [1st Squadron, 8th Wing] Squadron was first activated at Marignane in 1936 and equipped with Dewoitine 501 aircraft. It consisted of the Trident 3C2 Flight and the Lion 4C1 Flight. Its designation at that time was the Marignane 1/8 Squadron. It fought in the Battle of France from 1939 to 1942. Subsequently redesignated the Saintonge 1/22 Squadron, it was based in Dien Bien Phu in 1954. Upon returning from Indochina, it was assigned to the 8th Wing in Rabat under the designation of Maghreb 1/8 Squadron. In 1964, it was transferred to Cazaux and redesignated the Saintonge 1/8 Squadron.

The Nice 02/008 Squadron is organized into the 73d SPA [(?) Advanced Air Training Section] and the 78th SPA. The 73d's unit insignia is a stork, the 78th's a black panther. These two flights were initially formed in World War I. In 1933, they were combined to form the 2d Group of the 7th Fighter Wing, the Nice group, which was equipped with Morane 225 aircraft. After the Battle of France, the group withdrew to North Africa and resumed combat operations in 1943. In 1945, the Nice group was sent to Indochina. Later it participated in the police action in Algeria and supported operations in Bizerte. The Nice 2/7 Group returned to France in 1961 and was successively based at Metz and Nancy. In 1964, it was transferred to Cazaux where it became the Nice 2/8 Fighter Squadron.

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Each squadron has an authorized assigned strength of 15 pilots and 55 specialists or assistant specialists who are non-rated (or not on flying status) personnel (PNN).

The GERMAS has a personnel strength of 130 PNN specialists.

The ELVSV and the common support and service activities have a total of four officers and some 50 noncommissioned officers and enlisted men. The wing's overall assigned strength is 64 officers, 267 noncommissioned officers, and 59 enlisted men.

This personnel constitute the wing's "permanent party" to which are added classes of 80 to 100 student pilots that annually attend flight training courses conducted by the 8th Fighter Wing. These courses last approximately 4-1/2 months.

To accomplish its training mission, the wing has the following aircraft: 47 Mystere 4A, five T-33, six Fouga Magister, and two Broussard liaison aircraft.

The Mystere 4A is a single-seater fighter aircraft weighing 7 tons. It is powered by a Hispano-Suiza Tay or Verdon jet engine rated at 3,400 kilograms thrust.

Its weapons include two nose-mounted 30-mm cannon and bombs or rockets carried under the wings.

The Mystere 4A is a supersonic aircraft when in a slight vertical dive. It has a service ceiling of 12,000 meters and an operating range of 450 kilometers at low altitude.

Although this is an old aircraft, it is highly suitable for the 8th Fighter Wing's training mission.

The 8th Fighter Wing is an operational transition training squadron. Its primary mission is to provide combat pilot training to young pilots graduating from the Jet Aircraft Specialization School in Tours. Situated as it is between the flight training schools and combat units, the 8th EC's objective is to train pilots that are reliable under all circumstances.

The flight training of young pilots extends over a 15-week period during which they log some 50 hours of flying time in Mystere 4A aircraft. After a short period of familiarization and transition training in the Mystere 4A, the young pilot receives training in formation flying and air combat. He must be able to perform effectively as a member of a light combat air patrol.

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He simultaneously receives instruction in instrument flying and develops his sense of responsibility. The young pilot must, in fact, be able to bring an aircraft in trouble back to its home base and make an instrument approach and landing under conditions of poor visibility.

A few training missions are devoted to improving his very low altitude navigational proficiency, and at higher and higher speeds. But the principal new instructional experience for the young pilot is his introduction to aerial gunnery. Student pilots conduct a certain number of air-to-surface firing missions with aircraft weapons, rockets, and bombs and air-to-air firing missions with aircraft weapons against towed targets.

Upon completing their course of training in the 8th Fighter Wing, the young pilots are assigned to different combat units of the FATAAC [Tactical Air Force] and CAFDA [Air Command, Air Defense Forces].

The 8th EC's secondary peacetime mission is to ensure that its pilot instructors maintain a high level of operational proficiency. This requires continuous training in very low-altitude navigation, simulated attacks on ground targets, and air-to-air and air-to-surface operational gunnery practice.

All pilot instructors must have at least a rating of assistant combat air patrol leader. These instructors are selected from air force combat units.

The Mystere 4A aircraft will soon reach the end of their rated service life. The French Air Force has, therefore, approved their replacement with Alpha Jet aircraft. This replacement is scheduled for 1982.

With the delivery of these new aircraft, the 8th EC's mission will most likely be modified so as to focus even more on weapons and air combat training with all the rest of the training being conducted at the Jet Aircraft Specialization School in Tours.

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COUNTRY SECTION

FEDERAL REPUBLIC OF GERMANY

OIL REFINERIES NOT EQUIPPED TO PRODUCE ENOUGH GASOLINE

Hamburg CAPITAL in German Jul 80 pp 22-24

[Article: "Old Crackers"]

[Text] Why the German Oil Refineries Are Outdated

If a shortage of gasoline occurs at the German pumps it is only due in part to the meager rations of the sheiks. Because the petroleum industry has put off important investments until now, refineries in Germany are producing only half as much gasoline from crude oil as plants in the United States.

A shrill, off-key note was injected into the chorus of optimists at the most recent industrial fair in Hanover. The head of the chemical giant Hoechst Inc. in Frankfurt, Prof Rolf Sammet, jarred the exhibition of tomorrow's markets with the harsh judgment that the domestic petroleum industry belongs to the past. "The German refineries," Sammet said with great clarity, "are outdated--not technologically, but with respect to demand."

A few weeks ago the chief of Hoechst had already revealed to a narrow circle what it was that had moved him to give the FRG's petroleum processors this low grade. "If a shortage of gasoline for motor fuel were to develop in our country, it would not be because crude oil was so very scarce," grumbled Sammet at that time, "but because we don't utilize the opportunity to extract more gasoline from the crude." The chemical manager used a comparison with the United States to illustrate the old-fashioned manner in which German refineries produce: "In our country only 25 percent of the crude is refined to make gasoline. In the United States it is more than 50 percent." In fact there is a clear divergence between the petroleum products put out by the German refineries and the demand for oil products in the FRG. Instead of extracting fuels and the chemical feed stock naphtha from the more sparsely flowing expensive oil, German refineries are still completely geared to yesterday's market: heating oil. In contrast to the U.S. processors, who have always adjusted their plants in accordance with the gasoline thirst of the gas guzzlers, the German refineries concentrate solely on home-owners, power producers and manufacturers, in order to lure them away from the expensive, dirty and cumbersome coal with cheap, clean and convenient oil.

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But even the first oil shock in 1973 signaled that due to the high cost of this raw material and its incessantly soaring price future oil sales would no longer lie in the heating oil market, but in transportation and chemistry.

Although the Bonn government made it unmistakably clear as early as 1974 with the prohibition on new oil-fueled power plants that it is wasteful to use up oil in heating, the petroleum companies delayed the urgently needed conversion plants. These are capable of cracking, that is to say breaking up, the less demanded heavy oil into gasoline naphtha.

Instead, the oil companies prefer to buy from abroad one-sixth of the gasoline needed in Germany and one-third of the chemical feed stocks needed, and this is why they are at the mercy of the abrupt supply and price fluctuations of the uncertain Rotterdam spot market.

The oil industry furthermore prefers to use investments in coal processing plants in order to prove to the public how much they care about tomorrow (BP [British Petroleum]: "Forward, Back Into the Stone Age," Mobil: "Coal Turns Into Super"). No wonder, for while the companies have to pay for conversion plants out of their own pockets they can count on abundant gifts of money from Bonn for coal conversion plants.

However, State Secretary Dr Dieter von Wuerzen of the Federal Ministry for Economics has already announced to the oil processors that the outspoken partisanship for the competitor coal, so scorned yesterday, does not save them from the overdue efforts for conversion: "It is much faster and economically very much cheaper initially to replace the greater part of the 20 million tons of oil burned in industry to produce heat with coal and to crack the released heavy heating oil into fuel than to extract the same amount of fuel from coal liquefaction."

This economically correct sequence--first heavy oil conversion, then gasoline from coal--has already been accepted by one oil manager. "Until the last ton of heavy heating oil has been converted to lighter products," in the opinion of the chairman of the board of Mobil Oil Corp. in Hamburg, Dr Herbert C. Lewinsky, "liquefaction of coal makes little sense economically."

Lewinsky knows that with this insight he is sure to get the highest approval. For already after the economic summit meeting in Tokyo last summer Chancellor Helmut Schmidt complained about the dependence of the FRG on the "at present very expensive imports from Rotterdam"--because "not enough cracking plants are available in our country."

The Chancellor's rebuke encouraged Hoechst chief Sammet to scold his neighboring branch of industry outright. In drastic words he read the riot act to crude oil processors such as BP, Shell, Esso, Caltex, Mobil Oil or Texaco, saying that by no means are any spectacular pioneering deeds by entire generations of engineers necessary in order to modernize the 32 German refineries: "Conversion plants which can make gasoline out of heavy heating oil can be brought off the rack. Hundreds of them are in operation in the United States."

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Contrary to the opinion of the oil companies, Sammet in no way considers the conversion capacity of 26.1 million tons out of a total crude oil processing of 147.1 million tons last year to be impressive: "It is mostly a matter of thermal cracking plants, which only separate a small part of the heavy fractions into nonvolatile ones." The top Hoechst man regards only hydrocrackers and catalytic crackers to be "really efficient," and they are "not yet under construction to any great extent." While the capacity of the catalytic crackers will practically stagnate at 9.6 million tons over the next 5 years, the equipment of hydrocrackers in German refineries will improve from the present small figure of 1.8 million tons to an estimated 5.2 million tons.

How far the German crude oil processors thus lag behind the U.S. standard is substantiated by the following comparative figures: With the aid of ultramodern heavy oil separators U.S. processors extract an average of 44.1 percent gasoline from a barrel of crude, while FRG plants are satisfied with a scant 16.1 percent. The difference becomes even more evident with the example of one oil company on both sides of the Atlantic: In the United States Shell extracts 48 percent gasoline from the crude used; the Shell refinery in Cologne-Godorf, on the other hand, gets all of 19 percent. Late enough the German Shell Corp. has therefore chosen this oil distillery as "the point of emphasis of our investment program during the first half of the 1980's" (managing board member Hans-Georg Pohl) and intends to build a heavy oil separation plant for DM 500 million which after the end of 1983 is to convert 600,000 tons of heating oil annually into chemical feed stocks that are in great demand.

In comparison with the United States most German refineries come off even worse, even when a distinction is made according to the kinds of crude used in each case. In order not to produce even more undesirably great shortfalls the German processors until now have bought the lightest and most low-sulfur grades of oil. However, these good grades make up only 15 percent of world-wide resources. But in German refineries they have so far covered up to 45 percent of the need for raw material.

Pohl from Shell therefore freely admits that "we are already picking out the best." Prof Wilhelm Keim, director of the Institute for Petrochemistry at the Institute of Technology in Aachen, recognized: "We shut ourselves off from the viscous oils because our refineries cannot process them."

This period of spoiled nibbling at the oil cake is likely to have passed once and for all no later than the end of last year, because according to an estimate by the Petroleum Industry Association (MWV) the world oil market has turned around from "unabsorbed supply and a buyers' market to shaky equilibrium." To the general manager of MWV, Dr Hans-Joachim Burchard, this means that "after this year the consumption of petroleum will constantly drop."

This results in a three-fold superiority for conversion of heavy oil into gasoline. Such conversion plants are over due because they:

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--halt the burning of the expensive oil, which makes no sense from the viewpoint of energy policy, and instead increase the supply of highly sought gasoline and chemical feed stocks,

--can process any kind of crude oil, even the heavy oils, until now little used in German refineries and

--even when the supply of oil decreases guarantee through an improved processing structure that oil products remain sufficient where they are initially most difficult to replace: in transportation and in plastics factories.

But the German oil processors have wasted precious time. As early as 1 year after the first oil crisis Bonn signaled that there must soon be an end to the heedless burning of heating oil. The Third Electricity Conversion Law of 13 December 1974 demands that every new power plant fueled by heavy oil "requires approval." Since then there has been a "tacit gentlemen's agreement," in force, according to the spokesman for the Association of German Power Plants, Ernst Buck, not to build any new power plants based on heavy oil.

Since the private users of oil heating practice the virtue of saving with zeal and success and industry is rediscovering its old love for coal, the oil companies are losing ground in the heating market, while demand for fuels and naphtha is increasing.

Thus, gasoline, with a 1.3-percent increase in sales last year, diesel fuel with a proud 10.3-percent growth and chemical feed stocks with a full 15.2-percent increase in demand emphasize their future chances, while yesterday's runners arrived among the "also-rans": Light heating oil dropped 0.5 percent and heavy oil showed an 0.6 percent increase in sales.

Because this change in the market caught the German refineries unaware, they were forced to produce 22.3 million tons of heavy oil which is difficult to sell, and on the other hand they had to buy abroad what they could have extracted themselves from their dead stock of heavy oil: 3 million tons of gasoline, 3 million tons of diesel oil and 6 million tons of chemical naphtha. The consumer pays the consequence at the pumps, as oil expert Keim explains: "We in Germany must pay the prices demanded in Rotterdam."

With the analyzing sobriety of the scientist, Keim also reveals where the weak point should be sought: "National interest and corporate interest do not run in parallel."

Conversion plants are highly sensible economically, to be sure, but they are a horror to the business administrator because they are extremely expensive, above all the hydrocrackers, which run on costly hydrogen. According to Keim's calculations, a capital expenditure of at least DM 10 billion is necessary in order to convert the present surplus of heavy oil into fuel with such hydrocrackers.

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A second hurdle in the stepped-up construction of conversion plants is figuratively called the "tip of the iceberg" by Dr Norman von Scherpenberg, director of the Wintershall Refinery in Lingen on the Ems. To be sure, everything favors more hydrocrackers, because their yield is "more suitable than transportation fuel." But Scherpenberg sees a problem which he considers more important than the cost issue so highly touted by his competitors: "A residue of extra-heavy heating oil remains, which is highly sulfuric and cannot be burned according to today's environmental regulations."

The Wintershall Corp., a BASF [Baden Aniline and Soda Factory] subsidiary, by assuring itself of rare sales opportunities for the undesirable petroleum coke, for example as electrodes for the steel and aluminum industry.

Wintershall therefore dared build a hydrocracker ahead of its competitors, which in view of the questionable prospects for return is to Scherpenberg an "exemplary business achievement." Since this heavy oil conversion plant began operation in October 1977, Wintershall possesses in Lingen Germany's most modern refinery with a yield structure on a par with that of the ultra-modern U.S. plants and "which the German refineries must also attain in the long run" (Scherpenberg).

The timely investment of DM 270 million is already bearing fruit. It simultaneously belies the complaints of the competition that the oil companies would be driven straight into ruin. At Wintershall not only has the yield of gasoline and chemical feed stocks doubled, but earnings before taxes last year took the same powerful jump as well--totally in line with U.S. standards.

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COUNTRY SECTION

FRANCE

FICTIONAL ACCOUNT OF WAR SEES FRANCE LOSING

Paris PARIS MATCH in French 4 Jul 80 pp 42-43

[Article by Philippe de Baleine]

[Text] This week the president of the republic makes the big decisions on defense. That changes may be necessary emerges from new developments in armaments and strategy which lead to the fear, as this fictional study shows, that if a war exploded today, Europe would not win--at least in the initial round.

Suddenly--and the suddenness reflects only our own blindness--France and Europe realize that war is at their gates and that this war will almost certainly be lost given the present state of forces and strategies. The recent debates on defense in the Chamber [of Deputies] or within the staff of the parties shows that once again--as in 1940--France, facing a growing military threat, hesitates between several strategies. There are those who do not believe in the effectiveness of the anti-city strategy and who grimly contemplate conventional battle with the use of tactical nuclear weapons. And those who believe the threat of nuclear holocaust is not credible for other reasons, and that it is necessary to prepare for endless battles of armies on the borders. These academic discussions are frightening. Do they not bear a similarity to those which, before the last war, pitted defenders of the infantry battle against defenders of the tank battle?

When one no longer understands a military problem, it has become fashionable to use the imagination to visualize more clearly the scenarios in their real dimensions.

Let us therefore "play out" the scenario of a war [sometime in the period] 1985-1990 in order to try to grasp where are the weak points in our defense.

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Machiavelli Would Find it Absurd

--First Scenario. The West attacks the Russians...I have already shocked you. This possibility is dismissed by the political philosophers of the Western democracies: they will never be first to attack. Machiavelli would find it absurd, especially to announce it. This obviously invites the enemy to economize on his defensive system and to concentrate his resources on the preparation of an offensive. So whatever may be the outcome of the first scenario, we will send it back to the archives.

--Second Scenario. The Russians attack! This seems more plausible. Their strategists have often said their doctrine is to take the offensive "when the interests of Soviet Russia are threatened." So, these conditions being met (to the satisfaction of the Soviet leaders, in any case) here comes the attack. What happens? In the first 15 minutes of the attack, several hundred SS-20 missiles with multiple warheads with an accuracy to within 100 meters strike NATO's 600 recognized strategic targets (stores of nuclear warheads, fuel supplies, barracks, telecommunications center, command center, etc.). Well now! The war is over! The Russian army has only to occupy the cleared terrain. And the American strategic missiles? Don't count on them. It is known that neither the Russians nor the Americans will use these weapons so long as their territory is not directly threatened. This was long suspected, by De Gaulle first of all.

Your scenario is worthless, the Americans will say. Starting right off with salvos of tactical nuclear weapons is not fair. The rules say to start with conventional engagements. Tactical nuclear weapons are not supposed to enter into the picture unless the situation becomes desperate for one of the adversaries. Bigger and bigger ones will progressively be put into play, strategic weapons being in principle excluded so long as the territory of one of the two great powers is not threatened, all of which certainly seems to ignore the territory of Europe, as the debate on theater weapons proves.

The Americans Are Not Fools

This doctrine, called "flexible response," is the one invented by MacNamara and Kennedy. As a result of this doctrine, personally held by these two "strategists", the tactical nuclear weapons which Eisenhower had stored in great quantities (7000 warheads) in Europe--at least the most powerful of them--were brought back to the U.S.A. to prove to the Russians that one will stick to the little ones at the outset. These little rockets were dispersed in Germany so as to make them less vulnerable. The Americans are not fools! But neither are they fools enough to let them keep their nuclear warheads permanently. And what if a fanatical officer set off one of these nuclear rockets or shells, unleashing a world war! Thus the nuclear warheads are stored separately, in depots fiercely guarded by military security and perfectly targetted by the Russians. In case of danger it is up to the President of the

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U.S.A. (not to the unit commanders or even to the commanding general, mind you) to order the joining of the warheads to the vehicles. This, it seems, will take some 20 hours at most. But never mind this delay, however deadly, since the rules of the game as defined by MacNamara-Kennedy are that war begins with engagements of conventional units, and that one only arrives at tactical nuclear weapons through a gradual, prudent, well-thought-out escalation.

Everything would be perfect but for one small detail: the Russians, in their completely narrow-minded way, have absolutely no eyes for the beauties of "flexible response." To tell the truth, they don't even seem to have ever heard of it. Marshal Gretchko, supreme commander of their armies, says on the contrary, with the bluntness of an old soldier, that Russian military doctrine remains that of surprise attack with tactical nuclear arms. General Zanyalov and Marshal Sokolovsky confirm: "The path of the attacking forces will be opened up by nuclear fire." A Soviet strategist, Colonel Sirodenko goes one better: "Nuclear attack means a simultaneous attack on the full extent of the enemy's deployments."

To conclude: The first scenario being eliminated, and the second scenario unfolding according to the anti-"flexible response" theories of the Russians, NATO is then hit by instantaneous destruction of its defenses and in particular of its nuclear warheads stockpiled in targetable depots.

There Is No Third Scenario.

And what about the French in all this? you say to me. Concerning the French there are two possible sub-scenarios within the second scenario:

First sub-scenario: French forces have taken part in the battle from the start, on the German or Czech frontier. They have doubtless been destroyed by the first Soviet salvo. They will perhaps have been able to retaliate--feebly--with the Plutos, supposing that, contrary to present doctrine, these rockets were deployed beyond our borders,

The Russians Advance Through the Palatinate

Second sub-scenario: France remained outside of the conflict and passively observed the destruction of the NATO forces. The Russians advance through the Palatinate toward its borders. If the Russians stop there, the war is over. France is neither attacked nor invaded. It remains independent insofar as any independence whatsoever is possible for France in an entirely Sovietized Europe. If the Russians don't stop at the Rhine and attempt to cross it, the doctrine of the French general staff is that we would then utilize our Pluto tactical missiles, as a warning, before escalating to anti-city nuclear weapons. The use of our Plutos would clearly signify, "we intend to resist you to the end, that is to say, all the way to nuclear holocaust."

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This doctrine totally rejects the theory, however reasonable it may be, that the Russians, intending not to stop at our borders, would have disposed of our armed forces, our strategic points, and our Pluto regiments in the initial SS-20 strike, reducing our potential to resist to nearly nothing.

As to the credibility of the threat to use our strategic nuclear forces, it is weak. First of all because it is not credible that the president of the republic should take as equivalent the total destruction of France and the destruction of a few Soviet cities. Next because such a threat cannot be brandished unless it is supported by popular consensus. Do the French believe still that death is preferable to loss of liberty? A recent survey says not. 70 percent of the French prefer loss of liberty to nuclear holocaust. An elected president cannot fail to take this into account when his finger is poised on the red button.

Moreover, the [effort to] blackmail with the use of strategic missiles is comparable to poker. It is a game of blind bets and bluff, where the players should be equal on the surface. Niarchos could play poker with Onassis, but not with a tanker captain. Let us examine, for instance, the Cuban missile crisis, which from the start of the game was entangled in nuclear blackmail.

What, therefore, were the factors present?

1. The two adversaries were obviously of equal power. They could each destroy at least half the other. The threat was thus credible in terms of the margin of survival. "I will go all the way, even if I lose half my potential," they told each other.
2. They both knew that they would not do it. But as this was never said, a doubt remained. A small doubt, to be sure, but a small doubt where the stakes were infinite, and that is equal to an enormous doubt...
3. Then, one of the two forced the betting. Kennedy moves to the first stage nuclear alert status. The other hesitates, He does not call. He wavers. Makes his calculations, looks at his cards. Will he raise? No, he folds. It is much similar to the way Chinese generals gave battle in ancient times; meeting ceremoniously around a map of the battlefield, they showed the numbers and the positions of their respective soldiers and described the tactics they planned to employ. Following this exposition, an arbiter proclaimed one of the two generals the victor. The loser, who had saved his troops and munitions, simply paid a tribute. But one sees immediately that this game could not be played thus except between adversaries of perceptibly equal strength.

One can better see then why France cannot play at the poker of anti-city strategy with an opponent 10 times bigger. It simply cannot be, it would

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not be fair, even setting aside the absence, however important, of popular consensus for total destruction (liberty or death!).

What can we conclude from these diverse scenarios and the tragic ends which they all offer us? Two things are very clear: 1) In case of war, the side disposing of atomic weapons covering the entire extent of his adversary's troop disposition, stores, and lines of communication, has a crushing advantage. 2) The side which is attacked only has one chance of survival: to fire, during the 5-minutes' advance radar warning, a tactical nuclear counter salvo to neutralize the enemy invasion forces and the launching sites of the ss-20's, which the firing of the ss-20's will have made targetable. This latter mission could only be fulfilled by medium-range missiles, of the Pershing type, that Europe does not yet possess and which the Russians are adjuring it, with menacing force, to renounce.

- The mission of destroying the invading enemy forces could also be accomplished by neutron bombs, which are fashionable currently and have the virtue of sparing buildings. But why spare buildings if the salvos are fired on enemy territory where the invasion forces are stationed?

The Supreme Art Is To Win the War Without Making War

This capability of instantaneous retaliation assumes that the Western tactical nuclear missiles are constantly armed with their nuclear warheads, and that the order to fire can be given at the divisional level. These two provisos are absolutely contrary to official American, that is to say NATO, doctrine. Everything is under lock and key, and only Carter can make the decision to fire--but with the fatal delay in execution of 20 hours. Therefore, the temptation is immense for the Russians to attack a Europe which is defeated from the start and which the Americans assuredly will not defend with their strategic weapons at the cost of the almost total destruction of their homeland.

The temptation is still stronger for Europe to buy its survival with a series of Munichs. Russian geopolitical doctrine also takes its inspiration from the precept of the Chinese strategists at the time of the warrior empires: "the supreme art is to win the war without making war." Concerning policies unique to France, we have seen that, in case it did not participate in NATO's battle, its security and independence would depend, in the last analysis, on Soviet goodwill. An interesting gamble.

There remains one last chance: the construction on our borders of a new "neutronic" Maginot Line, so dear to Colonel Geneste. A viable idea on condition that the line fully covers the Ardennes this time...And that in the interval of 10 years during which it is constructed the adversary does not make any technological advances rendering it obsolete. But this is another story....

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COUNTRY SECTION

FRANCE

PSF SEEN TARGET OF PCF'S ATTACK ON CFDT'S MAIRE

Paris L'EXPRESS in French 21 Jun 80 pp 87-88

[Article by Ghislaine Ottenheimer: "Maire Traps the PCF"]

[Text] By associating Guy Mollet, the tortures in Algeria and the leader of the CFDT [French Democratic Confederation of Labor] with one another, the Communists are aiming at the PS [Socialist Party]. And it is the PCF which Edmond Maire is putting on trial.

After the breakup of the Union of the Left, and after the bodily separation of the Communists and Socialists, came the divorce. And the trial. On Monday, 16 June, at Belfort, for the first time in the history of the French labor movement, two of its representatives, one a Socialist trade union leader and the other a communist political official, are settling accounts before the bench.

The plaintiff: Edmond Maire, secretary general of the CFDT. He is accusing the Belfort federal secretary of the PCF of defamation for his statements made in the magazine COMMUNISTE: "Do Francois Mitterrand, Edmond Maire, and Andre Henry believe that we have forgotten that they pacified Algeria with flame-throwers, that they tortured the militants of liberty, and that they seized the press which testified to it?" It amounts to treating Maire, a leftist militant, like Pinochet! It is too much...

In the dock are: Jean-Marie Martin, the Communist official of Belfort. A young man 34 years of age, with the look of a dynamic official with his blazer and sky blue Oxford shirt. Standing behind the witnesses' and lawyers' benches are many trade unionists in open collars: on one side the CGT [General Federation of Labor] members, and on the other the CDTF members. The accused Martin rises. Awkwardly, searching for words, he tries to defend himself: "Of course the formulation was unfortunate." "Do you know that Edmond Maire has never been in Algeria?" asks attorney Robert Badinter. The muffled reply of the communist: "It was not Maire who was the target, but the PS."

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"The PS was born at Epinay in 1971," continues the lawyer. "Do you know if Edmond Maire belonged to the SFIO [French Section of the Workers International (French Socialist Party)]?" Silence. Then Attorney Badinter pulls out of his pocket a yellow card of the PSU [Unified Socialist Party]: that of the leader of the CFDT in 1961. The PSU which precisely always agitated for the independence of Algeria. Attorney Badinter continues his examination: "Is any member of the PS who joined after Epinay therefore responsible for the excesses committed in Algeria?"

Unruffled, Jean-Marie Martin repeats his lesson: "I want to speak of the historic responsibility of the PS." Attorney Henri Leclerc, Maire's second attorney, succeeds in disarming the accused:

"Did you forget the napalm and the flame-throwers when you campaigned for Mitterrand in 1974?" Martin's lawyers then come to the aid of their client. "Was it necessary to stir up the whole press over a poor choice of words?" asks Attorney Jean-Paul Ratier benevolently. The CGT members applaud. The CDT members protest. Badinter interjects: "Poor choice of words, flame-throwers, tortures?". Attorney Pierre Braun, lawyer for the PCF, interrupts: "If I said that Mrs Thatcher had had Joan of Arc burned, would Mrs Thatcher feel defamed?" The judge is obligated to interrupt the debate.

"Threats Against Liberties"

During the trial neither the "innocence" of Edmond Maire during the Algerian War nor the anticolonialist attitude of the CFDT--the CFDT of that time--is brought into it.

Then why this vitriolic phrase of Martin? The business goes back to last January. The secretary general of the CFDT had had the courage to state, after the CP has approved the Soviet invasion of Afghanistan that: "The attitude of the French Communist Party causes one to ponder the dark threats to liberty if its representatives should succeed to governmental responsibilities." So! Young Martin, a bit too ardent, said he was thinking of "giving a lesson" to "this hysterical anticommunist." I wanted to remind those people of the responsibility of the PS for the Algerian War who say today that the intervention of the Soviets who came to support the progressive forces of Afghanistan is an invasion," says the Communist leader. And associating Guy Mollet, the PS, the tortures in Algeria, and Edmond Maire, he launched his murderous phrase.

Did the leader of the CFDT have to go so far as to bring the matter before the courts? "No!" says the PCF indignantly, "Especially at a time when four militants of the CRDT have been brought by the Alstom leaders to face this same bourgeois justice." "The trial was imperative," retorts Maire, adding, "It was the CFDT which the PCF was trying to injure. It appears clear that our organization embarrasses the Communist Party. Through its establishment among the workers, it is an immovable obstacle to the

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hegemony which the PCF wants to establish over the working class." It is true that for the first time the CGT lost its majority in the committee of the Alsthom-Belfort corporation.

"Dirty Hands"

Actually, through this trial with its nationwide echo, Maire hopes to stop the continual PCF attacks against his trade union. The Communist Party has lost this trial in advance. In order not to lose face it tried to talk back. Accused, it played the role of the victim: "The purpose of this trial is to make it a trial of our party and to wash the PS of something indelible," explained a Communist witness, Henri Alleg, author of "La Question," an account of the tortures which he suffered in Algeria. The many witnesses called to the bar by the CP recalled that Mitterrand was minister of interior during the Algerian War, and that Guy Mollet and the SFIO had "dirty hands." While they, the Communists, had shown exemplary behavior from the beginning. Doubtless forgetting that they had voted full powers to Guy Mollet in 1956. Forgetting that the FLN [National Liberation Forces] had reproached the PCF for not having rendered unconditional support.

The judgment of the court will be announced after the lawyers' summing up on 28 June.

Passion is a poor servant of history when it wants to rewrite it. Belfort distilled the bitterness. The confrontation of Attorney Badinter and Attorney Braun, who had practiced side by side during the Algerian War, was sad for the people on the left. Sad also was the spectacle of the former resistance fighters or pro-FLN militants who, after having fought together, testified against each other today. Sadder still than the little phrases exchanged between Marchais and Mitterrand in the hemicycle of the Bourbon Palace.

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COUNTRY SECTION

FRANCE

PCF'S PRESS CRISIS EXAMINED

Paris VALEURS ACTUELLES in French 14 Jul 80 pp 17-18

[Article by Michel Chamard: "The Communists--Pens at Liberty"]

[Text] The communist press has also had a "rotten" summer. In 15 days, the daily newspaper L'HUMANITE lost a department head, the weekly REVOLUTION lost two deputy chief editors, while a third periodical went on strike.

At the same time, the federal authorities responsible for publication of the party journal, meeting in Paris on 28 June, congratulated themselves on the results achieved by L'HUMANITE-DIMANCHE but remained silent on the situation in other sectors. The sales of L'HUMANITE dropped 8 percent in a year, and REVOLUTION has only 20,000 of the 53,000 subscribers sought.

The collapse of the union of the left and the 1978 legislative defeats caused a serious stir among the intellectuals in the PCF. Journalists were no exception to the rule: since the month of March 1978, 10 of them have left the staff of L'HUMANITE.

The party leaders undertook to calm the storm by promising a certain freedom of internal criticism. Last October, the merger of the weekly FRANCE NOUVELLE and LA NOUVELLE CRITIQUE made it possible to launch a new doctrinal periodical, REVOLUTION, "the organ closest to the aspirations of the intellectuals in the class battle," the Central Committee called it.

The invasion of Afghanistan and the hardening of the PCF which was its corollary revived the disputes.

On Tuesday, 17 June, Mr Francois Hincker, one of the five deputy chief editors of REVOLUTION, and a former member of the Central Committee, sent a letter announcing his resignation to the managing editor of the periodical, Mr Guy Hermier, a deputy for Marseilles and the member of the Political Bureau of the PCF responsible for the intellectuals. Mr Hincker accused his employer and one of his lieutenants, Mr Lucien Marest, of challenging the promises of the Central Committee. "The issue is not personal, but political," he wrote.

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The reason for his resignation was Mr Hermier's refusal to allow Mr Hincker to respond in REVOLUTION to an article written by Mr Marest a week earlier. In his article, Mr Marest asserted the primacy of the communist leaders over the intellectuals in the definition of a cultural policy.

The following Saturday, Mr Hermier convoked the 60 members of the editorial council of REVOLUTION: only 30 appeared. Tense atmosphere. Mr Hermier and Mr Jean Burles, editor in chief, were isolated. No journalist took the floor, and the discussion developed among outside contributors.

Mr Claude Frioux, former president of the University of Vincennes, and television producer Daniel Karlin denounced Mr Marest's "Zhdanovism" (Zhdanov was entrusted by the Soviet communist party with the "guidance" of communist intellectuals after the war). They recalled that the clash of ideas was a principle acknowledged at the time the periodical was launched.

Historian Claude Mazauric and Deputy Jack Ralite supported Mr Hermier's good faith. It was then announced that a colleague, Mr Serge Goffard, was resigning, complaining of the lack of discussion on the editorial level. Mr Claude Prevost, deputy editor in chief, decided to call a "writers' strike."

On Wednesday, 25 June, in the suburb of Poissonniere, during an editorial conference at L'HUMANITE, Mr Roland Leroy, managing editor of the newspaper and deputy for Seine-Maritime, announced the resignation of Mr Jean-Pierre Gaudard, head of the economic bureau, because of "profound and almost total disagreement with the present policy of the party."

Harsh Blow

A journalist with L'HUMANITE for 10 years, Mr Gaudard, 31 years of age, was the hope of the editorial board: a protege of Mr Leroy, it was said that high posts would be his.

In a letter addressed to a number of comrades, Mr Gaudard complained of the "deprofessionalization" and "disqualification" of his newspaper. L'HUMANITE is more and more regarded as "a sort of internal bulletin the construction of which involves the journalists less and less."

On 6 July, it was the turn of Mr Michel Cardoze, deputy editor in chief of REVOLUTION. Previously the political and then the cultural editor of L'HUMANITE, Mr Cardoze did not get along well with Mr Leroy. He had gone over to the weekly where he thought he would find an atmosphere more consistent with his views. He said moreover that his resignation involved personal reasons, "excluding any disagreement with the general policy of the PCF."

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The resignations from the communist editorial board, following one after the other, are a relatively recent phenomenon. Many journalists have held responsible posts within the party organization. Mr Jean-Luc Mano, presently editor of L'HUMANITE, served as president of the UNEF [National Union of French Students], as did Mr Guy Konopnicki, before joining FRANCE NOUVELLE. But the association with non-communist journalists made possible a broader approach to the outer world than was possible for the permanent workers within a closed apparatus.

Mr Auguste Lecoecur, who left the PCF in 1954 after holding leading posts, made the following comment.

"The extension of compulsory schooling explains in part why the party is abandoned more readily today. Henceforth the militant has minimal baggage: he is less ill equipped outside the party than we would have been."

For Mr Lecoecur, an unskilled miner, leaving the party meant finding himself jobless at 43, with 3 children.

"I hesitated to abandon the feeding trough," he admits.

What becomes of communist journalists who break with the body of their colleagues? Mr Pierre Daix, former editor in chief of LETTRES FRANCAISES, writes books and is contributing to a number of "bourgeois" newspapers. Among other things, he writes a literary column in the QUOTIDIEN DE PARIS. Mr Konopnicki also writes books, contributes articles to LIBERATION and to MATIN DE PARIS. Mr Claude Perdriel's daily newspaper has welcomed Mrs Catherine Clement, a former communist press journalist.

The communist party image is suffering from this flood of resignations. But its leaders do not seem to be reacting very much. Less than a year away from the presidential elections, it doubtless does not seem to them a bad idea to face the competition with editorial teams purged of any "moody journalists."

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COUNTRY SECTION

FRANCE

UPC PRESIDENT SIMEONI INTERVIEWED

Paris PARIS MATCH in French 4 Jul 80 p 69

[Interview with Edmond Simeoni, president of the Corsican People Union, by Florence Portes]

[Text] [Question] You announce a new wave of violence in Corsica. Is this for this summer?

[Answer] It is difficult to program violence but Corsica is more and more subject to outrages upon the law: 3,000 in 15 years--please note this figure--surging upward over the last few months, causing death among civilians and gendarmes as well. The new fact, which will be irreversible--if the present policy of repression perpetuates, if disrespect for Corsican identity continues to deteriorate, and if political and social problems remain unsolved--is the vulgarization of violence in a country like ours where people grow accustomed to it and where some of them take a liking to it. As a consequence, younger generations will become engaged in violence and women will take part in the struggle. Given Corsican sociological background, one can say that inevitably there will be civilian victims if repression does not come to an end because that policy is the least adapted to a country where everyone has a weapon.

[Question] Plans for Corsican economic development are many. Frenchmen regard them as success stories. But for Corsicans they are flops. On which side is the blame?

[Answer] It is true that since the Aleria incidents France has considerably increased its aid. For instance: 30 billion Fr have been released per year for transports. Result: unchanged situation. The cost of living remained 20 to 30 percent higher in Corsica than on the continent. Please ask the tourists whether prices on their bills have changed!

[Question] Thus where is money gone?

[Answer] Haven't you ever heard any talks about Corsican clans and ruling families? Here, we are in the Mediterranean....

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[Question] Detractors of Corsica always cite these examples: share of France in social action: 12 percent in Meurthe-et-Moselle, 88 percent in Corsica; active population on the continent: 40 percent; in Corsica: 29 percent.

[Answer] That's right. Public money is not used on productive sectors. Corsica is being turned into a reserve of unemployed people. Instead of creating new jobs, France simply keeps Corsicans afloat through injections of social aid distributed in proportion to ballots. Corsica would have cost much less if companies had no headquarters in Paris; their AVT would thus not be comptabilized to the benefit of the capital. As for petroleum tax (50 billion), it is not put to our credit as well. Nevertheless, despite all that, a Corsican costs France 1.8 Fr only per year. But, the habit of continually saying "it's expensive" will lead to such overstatements as "it's very much expensive." Well, at that stage, Frenchmen would become the most ardent partisans of self-determination.... This by the by would not displease me.

[Question] No kidding! How can you do without French assistance?

[Answer] It is you who are kidding. It has been said that Corsica is poor but what do you do with 400 billion former francs coming from savings and banking assets, three-fourths of which feeds the economy of the continent? And the 1.2 million tourists per year? Isn't a source of wealth? What do they do to develop it?

[Question] The Corsican National Liberation Front (CNLF) speaks with bombs. You speak with mikes. Toward the same goal, isn't it?

[Answer] We conduct a political combat within the limits of the law to secure internal autonomy. The CNLF demands independence through armed struggle. There is no possible confusion.

[Question] Your movement has stagnated since two years.

[Answer] It seems to be at a standstill in the face of radicalization. The economic crisis is more strongly felt in Corsica than elsewhere. My compatriots accustomed to leaving the country no longer find traditional colonial outlets, nor jobs on the continents. Then what do the youths? They do not take refuge in activities patterned after Italy's Red Brigades because Corsica is allergic to leftism. Then in the face of the only adventure proposed to them: to be subsidized middle Frenchmen, they have to prop up violent movements for claims. However, our movement is structuring. We are 1,500 trained militants, who can use a gun but don't want to use it. The idea of autonomy progresses. Twenty years ago, talks about regionalization provoked smiles. Now, there is straight-forward talk about a Corsican nation and about decolonization.

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COUNTRY SECTION

FRANCE

GROUND FORCES GET FIRST SA-342M HELICOPTER

Paris AIR & COSMOS in French 14 Jun 80 pp 33-34

[Article by Jean de Galard]

[Text] Last Monday, 9 June, the official ceremony took place at Marignane marking the delivery by Aerospatiale [National Industrial Aerospace Company] to the Ground Forces of the "Gazelle Hot" SA-342M helicopter, 128 of which have been ordered by ALAT (Ground Forces Tactical Air Support). In the presence of representatives of the principal industrial firms which took part in carrying out the "Gazelle Hot" program and of many military personalities, Mr Roger Chevalier, general manager of Aerospatiale, presented the keys for a Gazelle 342M helicopter, serial number 3,475, to General of Engineers R. Guenod, director of the Technical Department of Aeronautical Programs, who then passed them on to Brigadier General Rabot, deputy chief (operations) of the Ground Forces General Staff.

Aerospatiale representatives present included: Legrand, manager of the helicopter division; Carayon, manager of the Marignane establishment; Allier, manager of the engine division; Petit, manager of helicopter studies, and Mouille, deputy manager; Besse, manager of flight tests; and Pasquet, chief test pilot. The Turbomeca company was represented by its general manager, Mr Pertica; Westland, by Mr Frost; Crouzet, by Mr Kholer; and SFIM [expansion now known], by Mr Bloch.

General Rabot, representing the chief of the Ground Forces General Staff, was accompanied by Brigadier General Maurice Cannet, commandant of the Ground Forces Tactical Air Support, and Colonels Bailleux and Sommervogel. General of Engineers Colin, director of the Flight Test Center, was accompanied by Chief Engineer Foucher, while Chief Engineer Meyer represented the southeast directorate of the Industrial Armaments Department (SIAR). Chief Engineer Dujois represented the Technical Directorate for Ground Armaments, and Principal Engineer Guimonet represented the Telecommunications and Aeronautical Equipment Technical Service.

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The Ground Forces, First Customer of Aerospatiale and the Biggest Still Today

In his welcoming speech, Mr Legrand stressed the part played by the Ground Forces in the success of helicopters developed by Aerospatiale. "The label ALAT is not only an important sales point, but also, in most cases, a necessary condition for sale." He recalled, moreover, that the French Ground Forces remain the first customer of Aerospatiale both from the chronological viewpoint and that of importance: first because of the number of units ordered, and next because of its level of competence. The fact that ALAT put its doctrine of aeromobility into practice led to its acquiring unequalled experience in everything pertaining to the use of helicopters. In conclusion, Mr Legrand expressed the wish that the spirit of cooperation shown throughout the carrying out of the Gazelle/Hot program between the army and manufacturers, as well as among the constructor countries (France, Great Britain and the FRG) will continue to develop.

Mr Roger Chevalier introduced the SA-342M not only as a variant of the SA-341 but especially as a modern antitank helicopter "of modest size but exemplary character," a fine illustration of what can be accomplished within the limits of a reasonable budget and acceptable delivery schedules when manufacturers and their customers are motivated by a common will to achieve. Addressing himself to the representatives of the chief of the Ground Forces General Staff, and of the technical director of aeronautical constructions, the general manager of Aerospatiale made a point of stressing "a very important point for accomplishment of this system of first-generation antitank weapons." Aerospatiale, Mr Chevalier continued, has responsibility for both vehicle and armament. "Our company is in fact one of the rare worldwide manufacturers who can take complete responsibility, vis a vis the client, for the overall supply through its helicopter division, aircraft project manager and its tactical weapons division.

"I know that your considerations will lead you to select a manufacturer who will be responsible, for future series of the SA-342M, for good functioning of the weapons system as a whole.

"Today, in the presence of Messrs Legrand and Allier, I am able to assure you that my company is ready to reply favorably to such a desire."

In his speech, General of Engineers Guenod stated that all the SA-341 helicopters had been "made able to carry the Hot antitank weapon" and that the SA-342M, thanks to an extension of the area of its use (aptitude for night combat in particular), is a true weapons system, having been the object of detailed studies made to reduce its "detectability." In concluding, he called attention to the importance of purchase and commissioning costs in any program of this type.

General Rabot discussed the subject of antitank combat, "destined to last a long time yet, whatever theater of operations is envisaged"; he expressed the idea that "dissuasion rests on a group of coherent forces" and he

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formulated the wish that the cooperation shown throughout carrying out of the Gazelle Hot program will be found again "for the future model which will see the light of day at the end of the 1980's."

Well Adapted to Antitank Combat

Successor to the Alouette III/A.S. 11/ antitank helicopter system, the Gazelle Hot SA-342M is a clearly improved version of the Gazelle SA-341. It profits, with respect to the latter, from a strong reserve of power (870 French horsepower [1 French horsepower = 75 kilogram meters/second] instead of 600 French horse-power), and from an increase of 100 kilograms in the maximum weight. Its Astazou XIV M turbine of Turbomeca has automatic starting, high-energy ignition and an all-fuel regulator. The definitive version includes a jet deviator, which reduced infrared emission. The unit is equipped with an SFIM 85G automatic pilot and an autonomous navigation system whose main elements are: a Doppler RDN-80B radar (Marcel Dassault Electronics); a Nadir navigation calculator (Crouzet); an IP 152 polar indicator (Crouzet); a gyromagnetic compass (SFIM); a 201 temperature probe (Crouzet); a 51 compensated anemometer (Crouzet). Moreover, the cockpit lighting was adapted to allow night flight with small-channel binoculars.

An Efficient System

The helicopter-missile weapons system is today considered to be the most effective of all antitank combat methods. The reasons for this superiority are both tactical (immediate availability of the helicopters and thus very short delays before going into action; rapid concentration or dispersion of antitank action) and technical (great "drive" and high-precision of the missile; location and identification of the target as well as very high probability of reaching it). The French-German Hot antitank missile constructed by Euromissile (Aerospatiale-MBB [expansion not known] cooperation) has a 400-4,000 meter range of fire and can pierce all existing armor plate. An SA-342M with four Hots could halt the progress of six tanks.

The 128 SA-342M helicopters will be delivered between 1980 and 1985, in annual series of about 20 units.

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COUNTRY SECTION

FRANCE

'SYLA-20' LASER-CONTROLLED 20-MM GUNS TESTED SUCCESSFULLY

Paris AIR & COSMOS in French 5 Jul 80 p 35

[Article by Pierre Langereux: "SYLA Gun Fire Control System"]

[Text] Thomson-CSF's SYLA twin 20-mm weapon system with laser fire control recently successfully completed its first tests. It will be available on the market very shortly. Designated SYLA-20, this system is of modular design so as to be adaptable to any type of vehicle of suitable tonnage. Specifically, it can be mounted on the Crotale type electric-wheeled armored vehicle whose great cross-country mobility, notably in sand, have prompted its selection by many countries. This version of the SYLA 20 could complement Crotale [surface-to-air missile] units deployed in local defense systems whose very short-range ground and air close-in defense can thus be provided in a well-knit context of mobility and operational and logistic complementarity. In such a defense system, the Crotale's acquisition vehicles would furnish early warning and target designation support to the antiaircraft guns.

Thomson-CSF also produces twin 30-mm antiaircraft weapon systems, equipped with the Oeil Vert [Green Eye] fire control radar, for the static defense of key points as well as the mobile protection of armored units. Thomson-CSF is currently mass-producing the twin 30-mm weapon system, equipped with laser-radar fire control and TV tracking units, to be mounted on the French AMX-30 tank chassis. It is also planned to mount this twin 30-mm gun system on the German SPz Marder tank as well as on any wheeled or tracked vehicle capable of carrying the BT-30 turret whose relatively light weight (8 tons) makes it highly suitable for a wide range of vehicles

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COUNTRY SECTION

FRANCE

OUTLINE OF ONERA 1980 PROGRAM CONCLUDED

Paris AIR & COSMOS in French 21 Jun 80 p 18

[Text] We examined the topics of ONERA research in the field of aeronautics (aircraft) in our issue number 814; the article published in Air & Cosmos number 815 was devoted to work related to rotary wings, turbo engines, and related components; we now complete this survey with a look at the bureau's work in the field of missiles and space.

With 145 million francs for operating expenses, which is 28.5% of the planned budget for 1980, strategic and tactical missiles and their associated equipment occupy a considerable place in ONERA's activity. However, a good part of the work is classified so it is scarcely possible to discuss it in detail.

In the field of strategic missiles, the work in question obviously is related to the future M4 missile, especially the re-entry portion (wind tunnel tests in progress).

The ASMP (medium-range air-to-ground missile) will be propelled by a liquid-fuel statoreactor. The ONERA is thus continuing its work in this field, with which it is well acquainted. This work is directed by the Department of Energy and by the Department of Interdisciplinary Studies (D.E.S.) and is coordinated by the D.A.M. (Department of Military Applications of the Atomic Energy Commission).

Still in the propulsion field, the ONERA, in cooperation with the SNIAS, is continuing its work on the statorocket, composed of a statoreactor combined with a gas generator, the fuel being stored in solid form. This is a new concept, initiated and developed by the bureau's engineers, and it appears very interesting.

The space field obviously has two aspects: one dealing with launchers and one with satellites. The Bureau has participated appreciably in several fields in the development of the Ariane launcher, including study of the Pogo effect, the launcher's aerodynamics (attempts to reduce drag),

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determination of noise level, etc. The work on the Pogo effect, for example, is being carried out in collaboration with the CNES, the SNAIAS and the SEP. The results obtained are interesting and very positive, since the Pogo effect is nil at the first-stage level and weak at the second-stage level. The phenomenon has now been completely mastered, and France is in the lead with respect to the knowledge that has been gained.

The work on noise level at the satellite's outer shell and through the latter is the result of studies carried out on the changes in wideband pressure passing through the structure. The contracts are let by both the ESA and the CNES. This is a model application of basic and applied research giving excellent results. It is of great importance because it consequently allows making calculation concerning the structures of the satellites, which are subjected to a harsh environment (about 180 decibels).

Another example of work which allowed highly sophisticated equipment to be developed is that on ultrasound-measuring meters developed in cooperation with Crouzet and which allow the precise measurement of ergol levels in order to obtain optimum distribution, especially toward the end of a motor's operation.

Again with respect to Ariane, the work in progress deals of course with the detailed analysis of the results of the first launchings. Longer-term work is related to studies of cryogenic motors powered by ergol which can be stockpiled (uneven combustion, etc.) with the idea of developing a family of Arianes; to recovery of the first stage; to aerodynamics, etc. We might also mention here the HERMES and MINOS programs.

The work on satellites deals with several sectors; the corresponding general activity is centered at the CERT and deals with the development of space technology: a study of the effects of the space environment on the satellite and its components (aging), effect of ionized particles on the latter (for example a decreasing yield of the solar cells with time), loss of function of the thermal coatings, etc.

The DERTS is also studying electrical phenomena encountered on satellites of the "Symphonie" and "Meteosat" types and which are expressed, for example, in the form of inappropriate telecommands. The same department is studying the behavior of balloon coverings in harsh atmospheres (work on VENERA).

The DERO is studying charge-transfer detectors and the systems which will be used on observation satellites to detect light (photodiodes) and particle (photon) counters and is supplying the CNES with technical assistance for Project SPOT. In the military field, the ONERA is taking part in preliminary studies on the future SAMRO satellite.

The bureau's grating spectrometer will be used for the study of infrared radiation on the Spacelab, while tests are being carried out on a balloon

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at up to 40 km altitude. Aircraft tests should also be mentioned (STRAT02 experiment with the Caravelle) which are being carried out in cooperation with the National Weather Service, and the LIMS experiment (analysis of the results obtained by the NIMBUS satellite). In general, the grating spectrometre belonging to Andre Girard is proving to be one of the world's best; it permits analysis of the minor components of the upper atmosphere, even in trace amounts. The work related to the study of the environment and climate is based on a better knowledge of these phenomena, whence the importance of this work.

In closing, let us mention a feasibility study of a "Super Cactus" presently under way for the ESA whose purpose is to measure the earth's radiation balance (Project BIRAMIS) and to carry out precise trajectographic and rotational measurements of the earth.

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COUNTRY SECTION

FRANCE

BRIEFS

CORSICAN 'COMMANDO' IN MARSEILLE--The National Liberation Front of Corsica (FLNC) has established a "commando" unit in Marseille. This group of approximately six members is prepared to take military action. This move constitutes a complete change in FLNC strategy. With its population of 120,000 Corsicans, Marseille is France's largest Corsican city and up to now has served as a refuge and meeting place for Corsican separatists. In fact, the Corsican independence movement has held several summit meetings in that city. Only Paris and the Paris region have experienced nights of Corsican instigated violence. Now the independence movement wants to "bring the fighting into the enemy's territory." A pretext for such action still has to be found. For example, a rather stiff sentence given FLNC militants by the State Security Court. [Text] [Paris L'EXPRESS in French 28 Jun 80 p 68] 8041

ENERGY GDR ESPIONAGE TARGET--It is more complex than the investigators expected--more serious also. The espionage case which provoked the expulsion of two East German diplomats, disclosed last week by L'EXPRESS, is surprising because of its breadth. Documents were stolen from the Ministry of Industry. They relate to French petroleum exploration in Africa. An employee of a petroleum institute is in prison. But the East German spies were interested in other French energy sources--the nuclear ones. [Text] [Paris L'EXPRESS in French 7 Jun 80 p 130] 5586

NEW MISSILE--The builders of "SATCP," the new very-short-range ground-to-air missile for the French army, may be chosen very soon, perhaps in June or early July. Of the four bidders for the project, only Aerospatiale and Matra are still in the race; Thomson-Brandt and the SEP were successively eliminated after examination of their bids. Three types of "SATCP" may be produced: one for the infantry, one for site defense (transportable type) and one for ground vehicles. A naval type is also under consideration. The missile would in principle be for the three military services and especially for antiaircraft defense, but antihelicopter defense is also being considered. The "SATCP" would have a range of several kilometers. [Text] [Paris AIR & COSMOS in French 21 Jun 80 p 30] 8838

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COUNTRY SECTION

SWEDEN

DEFENSE MINISTER KRONMARK: WEAKENING TO CONTINUE

Stockholm VECKANS AFFARER in Swedish 5 Jun 80 pp 56, 57

[Interview with Eric Kronmark, defense minister, by Lars Eklund, journalist: "Kronmark's prescription for savings: Increased fight against the defense bureaucracy"]

[Text] "A minister of defense is not supposed to be popular among his own. He shall call for productivity just as any other corporation manager." So says Erik Kronmark who will be exposed to hard pressures to contribute to the cutting of government expenditures. In the short run, he does not have any worries about the credibility of the Swedish defense. And, among other things, he points out possibilities for rationalization by utilizing services "across the borders between different military service branches and different kinds of troops." "We will have to start thinking along new lines and slaughter some holy cows."

[Question] Can Sweden, in an economic crisis that necessitates a severe restraint in private as well as in public consumption, maintain a credible defense force?

[Answer] We cannot get the additional contributions needed to reach the aims of the defense resolution of 1977. That would imply an increased allocation by one billion crowns (in fixed prices) annually. In my judgment an increase in the expenditure ceiling by at least the same size as in 1977, in addition to a restructuring of our peace- and war organization, would be required to sustain the fighting force necessary for our policy of neutrality to remain credible.

It is true that the defense forces will suffer a weakening in relation to those of foreign countries compared to the present situation - but they will remain strong during the first part of the Eighties thanks to the heritage from the Fifties and the Sixties, the decades of growing supplies of equipment for the armed forces. We still have one of the strongest air forces in Europe.

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[Question] Fate apportions her favours unevenly - as for example when a member of parliament for the Moderates [Conservatives] forgets about the voting on the defense issue...

[Answer] As it turns out there will not be any unforeseeable consequences following from this unfortunate drawing by lot. The coming fiscal year is financially secured. So it will go totally according to plans. The Government is also firmly committed to fulfilling the resolution of 1977. There may be some paper-work, but when it comes to the military substance the Government stands firm.

[Question] Is Jan Myrdal right: we are now in a situation, which is weirdly similar to the last years of the Thirties?

[Answer] As you know he is not the only one with such thoughts - Chancellor Helmut Schmidt, among others, has entertained similar trains of thought. And if you have a disposition to draw historical parallels you could easily find support for the thesis saying that great powers after some successes get an increased stimulus to go further.

[Question] During the wage negotiations many people complained about a lack of awareness of the crisis in Sweden. Maybe we are equally unaware of the increasing tensions in world politics?

[Answer] We have a certain tendency of screening off ourselves. The world around us is clear about the radical change in the international situation. We were awakened by the events in Iran and Afghanistan - but the cold snap occurred already in the mid-Seventies.

Taking a divergent opinion from many observers it seems as if a great number of Swedes think that the situation has returned to normal.

The 1980's will probably be characterized by continuing sharp tensions between the blocs - primarily in relation to the struggle about the oil, a struggle which will not abate but instead culminate some time during the 1980's.

These conflicts in world politics will in all probability lead to increased rearmament on both sides.

[Question] NATO's storing of arms in Norway and Denmark - the Russian concentration of forces in Murmansk and on the Kola peninsula?

[Answer] Earlier NATO-plans concerning the defense of Norway and partly as regards Denmark were based on the West's dominance of the seas. As a result of the spectacular expansion of the Soviet fleet this dominance has now become part of history. The strategic balance in the Norwegian Sea has been shifted - in a major conflict receiving supplies by the Sea will be difficult. It is easier to transport people. That is why NATO finds it necessary to store arms in advance.

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Foreign observers now ask if a reduced Swedish defense capacity could create a dangerous vacuum. My reply to this is that our striking power is not reduced in real terms within the borders of Sweden, only in relation to the world around.

"We are strong enough not to yield to pressures"

[Question] And this makes us more susceptible to pressures and demands from abroad?

[Answer] We still have a defense, strong enough for us not having to yield to pressures. This country cannot be subjugated by a simple operation - it would require a massive effort, even by a major power.

Our threshold of credibility shall be such that the Swedish defense capacity does not invite pressures!

[Question] The inviolability of the Swedish air territory: Can we handle cruise missiles on their way toward targets in another country?

[Answer] According to international law we have an obligation to uphold the Swedish air territory. It will take some time before the cruise missiles will become operative - but we know that already our Viggen-system has the capability to discover and to bring down the missiles. That capacity, among others, we must have and, preferably, reinforce.

[Question] The total conflict, is it possible - including intercontinental nuclear bombardment?

[Answer] Even if circumstances lead up to a conflict this does not have to imply a total conflict - as long as both sides have second strike capability the balance of terror remains a reality. That is why I think future conflicts will be limited. The United States did not revert to nuclear arms in Vietnam - this was not even considered when the entire prestige of the nation was at stake and defeat became increasingly recognizeable.

There are certain signs of common sense shown by political leaders - even when it comes to major powers in a situation of crisis.

[Question] If there is a big crash, where will it take place - in the Middle East?

[Answer] The center of risk is right there - among other things this is evident from the strong concentration of naval units, which is taking place in the Arabic waters outside the Gulf and to the south. But many people point to the fact that military strategic conditions there are complicated for the two super-powers. Limited possibilities for keeping bases and long distances to cover.

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If a major conflict develops attention is directed toward Europe, where the major forces are located.

[Question] A number of years ago a military defector from the East stated that the Soviet Union estimated that 48 hours would be required for completing an occupation of Sweden. What is the reaction of a minister of defense to such talk?

[Answer] Science fiction! Such a plan, if it exists, is not credible. Sweden is a large country - and we still have a respectable defense. I have said it before: A comprehensive effort would be required to break the Swedish resistance.

[Question] The concentration of forces in the North and the Norwegian fjords - maybe attractive as submarine bases?

[Answer] Trying to look at things in an objective manner, it may in some circumstances be in the interest of the East to expand the protection zone for the base at Murmansk. Naturally, the West has also an interest in getting as close as possible to it. That is part of the Atlantic strategy. A further factor is the oil shortage which has made the Northern part of the Atlantic Ocean outside Norway even more interesting.

But, from a Swedish point of view, we should look upon Murmansk as being part of the strategic expansion of the super-powers. At present the world's largest military base is located there, and in a certain situation the West may wish to attack it. But, we should not consider the base as being specifically pointed toward us - it is pointed toward the large sea. This means that the possibilities for us to receive supplies in the event of a major conflict will be highly reduced in relation to the last great war.

"Impossible to support a non-military aircraft industry without a military basis?

[Question] Do we fray our neutrality at the edges if we develop the JAS-NY aircraft in cooperation with a NATO-country? May Wechselmann thinks so.

[Answer] We have never built a car in this country without foreign parts. And no aircraft either. Materially speaking, Viggen is 30 per cent foreign and presumably JAS will have the same proportions if this aircraft is developed.

There is no reason for us Swedes to start inventing things that already have been invented!

We must buy an increasing number of module systems from abroad. And if the intention is to build an aircraft which will remain modern also in the future there is a need of module systems not yet at hand. Consequently it is reasonable to enter into development cooperation with an aircraft industry abroad.

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but the final mix - the total system - will stay Swedish and unique to us and to our conditions and circumstances. We will not have to pay for excessive performance characteristics we do not need. We will retain a technical skill which is the fundamental condition for a non-military aviation industry. Because there does not exist any serious aviation industry which does not base its existence on military production.

All logical reasons indicate that we should concentrate our efforts on a plane which satisfies our Swedish specifications and is within our specified economic ceilings. I believe our aircraft industry is able to meet the challenge - if not, we will, of course, have to turn to the international market - whereby, regrettably, domestic civil aircraft construction would decline. Some debaters really show a touching concern for our neutrality. According to their views, we shall not have any air planes at all. As a matter of fact, a neutral country must maintain a national air force. It is, of course, of additional value if the air planes are Swedish.

[Question] Be that as it may - when the fat really is in the fire we will stand there without any planes to buy from abroad nor any module system to acquire. That is what happened the last time.

[Answer] We will have to stock as much imported components as possible. Or we will have to follow the practice from the blockades during the Second World War: to start "pirate - production."

[Question] How to maintain an efficient defense when expenditure ceilings turn tight?

[Answer] By further rationalization of the peace organization: by utilizing services across the borders between different military service branches and different kinds of troops. A century of thinking along territorial lines may be difficult to erase - but it can be done. Some years ago, we cut the higher staffs down - reducing personnel by 30 per cent. The result was a clear success.

We will have to start thinking along new lines and slaughter some holy cows. A minister of defense should not aim at being popular among his own - he shall call for productivity just as any other corporation manager.

I am no friend of extensive studies with many decimal points: it is better to go straight to the heart of the matter - this amount of money is available to us, that much is your share. Start solving the task of how to defend Sweden. It is surprising to see the amount of fresh thinking that crops up once some rigid red tape is removed.

[Question] Is the aircraft issue a young cuckoo in the nest of the Swedish defense?

[Answer] All systems may, of course, be regarded as young cuckoos - not because of the development of the military forces but on account of Sweden's

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dilemma as regards its domestic economy. Is the universal military training a young cuckoo? It is expensive, i.e. due to regulations relating to working time and the development of wages and salaries. But it is needed because we have a small population living in an extensive country: we need a relatively large number of military units.

But here we face a dilemma - and when choosing between many units with obsolete equipment and fewer units with good materials we have to choose the latter. During the last days of the Second World War a certain Mr Grofaz was sitting in his concrete shelter in Berlin commanding armies that only existed on his own maps.

The Swedish military force must not lose touch with real life: our units shall have a modern equipment. Juggling with out-dated brigades does not deter any potential enemy.

[Some personal characteristics of Mr Kronmark]

Does not give in to political complications.

A characteristic feature of Eric Kronmark, Minister of Defense, 49 years old, is that he is very stubborn. An example of this is his ability to - time and again - infuse fresh life into the Swedish aircraft project, which after every crash in the Riksdag has been rigged up again and reintroduced into the debate with a partly new content.

That is why it is not absolutely certain that Eric Kronmark will accept the factual consequences of the voting mistake of Per Unckel, his party brother and colleague as a Member of the Riksdag, trimming the planned appropriations for the defense during the next 5-year period by two billion crowns. As a result of this, total appropriations were reduced from 68.2 billion crowns, as proposed by the Government, to 66.2 billion crowns, as proposed by the Social Democrats.

The voting mistake will in all probability be amended by a supplementary Government bill.

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COUNTRY SECTION

SWEDEN

COMPANIES PUSH OIL SEARCH IN GOTLAND, ABROAD

Stockholm VECKANS AFFARER in Swedish 29 May 80 pp 25,27

[Article by Ake Landquist, journalist: "At last - the Swedish hunt for oil accelerates by the putting up of 100 million Swedish crowns as starting capital."]

[Text] Not until after two oil crises has the Swedish oil search accelerated. The Seventies became a lost decade. A special state-financed fund has only been half-used and so far the results of the oil prospecting during a whole decade have only been some splashes of oil from Gotland. Now, the state grants for oil prospecting will be amended - the goal is prospecting for 100 million crowns annually.

Swedish oil prospecting is beginning to get started. The number of prospecting rights is growing, the number of drillings also. The 1980's may be the decade when Sweden itself finally produces some of the oil on which the country is so dependent. Sweden has the largest dependence on imported oil of all the industrialized countries in the world (on a per capita basis).

There had to be two oil crises - 1973/74 and 1978/79 - before serious Swedish oil prospecting got started. The 1970's were characterized by lacking Swedish prospecting policies. "We let the trains pass us by. The effort was totally insufficient. Sweden only spent a fraction compared to what the competitors did," says Bo Ekman, President of Volvo Petroleum.

"Did we have any prospecting policy at all?" says another critical oil company director.

The 1970's meant a lost decade when it came to Swedish oil prospecting. But toward the end of the decade the establishing of guidelines got started. The goal was laid down in the energy bill proposed in March, 1979, by the Liberal Party Government with Carl Tham as the responsible minister of energy:

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Oil prospecting at a level of 100 million crowns annually from and including 1980/81. Even though this goal will not be achieved it implies a significant improvement.

The starting point is 1978. Then, spending for prospecting were about 30-40 million crowns annually. That year, an oil prospecting fund was established to which the corporations were allowed to apply for grants to oil prospecting in accordance with a new set of rules for grants. At the same time the Government decided to concentrate state prospecting spending to a central base organization within the state-owned oil company Svenska Petroleum. At present, SP Exploration AB constitutes this organization.

The fund is financed through a special stockpiling fee on oil. From this, 4 crowns per cubic meter heating oil and diesel (but not gasoline) go to the fund. Since the start on July 1, 1978, the fund has received a total amount of about 180 million crowns. At present, the balance is somewhat above 100 million crowns. Around 80 million crowns have been disbursed. All funds except for 700,000 crowns have been used for oil prospecting by the state.

Only one private company has received any money: A Johnson Exploration for prospecting on the British North Sea shelf. One company has been turned down: Salens Energy for prospecting in Turkey. The reason was that Turkey has put a ban on the export of oil.

The cardinal rule for receiving a grant is that the oil that may be found or at least most of it is to be shipped to Sweden. The general grant covers 50 per cent of the prospecting costs. For prospecting by the state a special grant of 100 per cent may be available. In this case all the proceeds are to be paid to the Government. "This is a form of commission work," says Lars Hjort, Deputy Under Secretary and Head of the Energy Section of the Ministry of Industry.

Up to now the general grant has been tied to prospecting in the North Sea and surrounding areas. However, at the turn of the mid-year the geographical link will be repealed. The grant will then be paid for prospecting irrespective of where in the world it is pursued.

The reasons for this change is that it is difficult to be admitted to the Norwegian continental shelf. Thus, grants for prospecting have not been fully utilized. The Norwegians demand industrial projects or cooperation in research and development to grant concessions. Of Swedish companies only Volvo Petroleum has, until now, succeeded in passing over this threshold.

Difficult To Reach the Goal

The purpose of the fund and the system of grants is to increase the Swedish prospecting activity up to the level of 100 million crowns. That will enable the execution of such a number of projects that a reasonable spread of risks

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and a good continuity is obtained. But the goal will not be reached, as intended, in two or three years time i.e. 1980/81. The reason is the very difficulty in being admitted to the Norwegian shelf. During its short existence, SP Exploration has not succeeded in coming forward with the necessary industrial projects. Furthermore, Volvo's agreement with Norway was not concluded. Consequently, the Swedish prospecting target had to be postponed for the future. Now, the goal is estimated to be reached sometime 1984/85.

Another instrument to secure Swedish crude oil is a government guarantee. It can be used to make it easier for Swedish companies to join as partners in concessions or in already producing oil fields (and also for, e.g., gas and coal). The guarantee amounts to a total of two billion crowns. So far, SP has used around 500 million crowns for an agreement with Norwegian Oil Consortium (Noco) on the Norwegian shelf. Furthermore, 32 million crowns have been spent on a storage plant for bottled gas in Oxelosund (being built by SSAB, SFK, Fagersta and others).

Four Swedish organizations are engaged in oil prospecting:

SP EXPLORATION. Affiliate of SP and the Government's instrument for its prospecting policy. Replaced Petroswede in 1979. In the beginning of 1980 Petroswede and SP had spent about 100 million crowns on prospecting. The budget for 1980 is 45 million crowns. SP Exploration owns the following prospecting rights:

--Norway. A share in a block in accordance with the Noco agreement. Drilling was performed in 1979. No drilling plans for 1980. Intends to ask for a concession in the sixth round.

--England. Owns share in three blocks. Agreement is almost concluded regarding shares in two other blocks. "An agreement in principle has been negotiated. It will be concluded this summer," says Bengt Holmgren, responsible for the project at SP Exploration. Will ask for a concession in the seventh round. Has already joined two bidding groups and is in the final negotiations with a third. 1979 meant the break-through on the British shelf.

--Tunisia. Has prospecting rights in three blocks. Three to four drillings are to be made this year. A gas finding included too much non-flammable gas to be exploited. At this moment an oil finding is being evaluated. The analysis will give the answer during this summer. This is, so far, the most interesting oil finding having a Swedish interest.

--Italy. Has a prospecting right in the Adriatic Sea. Seismic examination is being done.

--Trinidad. Has a prospecting right in the sea northeast of Trinidad. Drilling is now being done.

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--Sweden. OPAB is prospecting for oil since ten years. 200 million crowns have been invested. Until now 172 drillings have been made. The Government now owns 60 per cent of the shares in OPAB. Of the funds 109 million crowns are invested by the Government. Budget for 1980: 11 million crowns in Government funds. The private shareholders have not invested any money since 1977. Minor findings have been made on Gotland. Until now, 8140 cubic meters of oil have been produced. It is being refined at Nynas at Nynashamn. The proceeds from the oil have covered the variable costs of about 800.000 crowns annually during four years. An interesting finding on the northern part of Gotland is now being evaluated. Drillings at sea later this year.

Volvo Petroleum. Volvo indicates its efforts as regards the energy sector by the recent establishment of an inter-company group. Volvo Energi AB has three branches: Volvo Petroleum (to prospect for oil and gas), Volvo Offshore (to supply equipment) and Volvo Energisystem (to sell energy technics and services).

Volvo Petroleum has joined the International Energy Development Corporation (IEDC), which is going to move from London to Geneva. The IEDC has recently got a fourth shareholders: the national oil company of Kuwait, Kuwait Petroleum Corporation. All the shareholders own 25 per cent. President is Nordine Ait-Laousine, a former top man in Sonatrach, of Algeria.

--Norway. Volvo Petroleum has joined a concession north of the 62nd latitude. Drilling this summer, maybe two drillings. Will ask for means from the oil prospecting fund.

Johnson Exploration. Is owned by Nordstjernan and Nynas Petroleum. The Johnson Company Group is a pioneer in Swedish oil prospecting (since the Nobel brothers prospected in Russia before the revolution). Has been in the business since the mid-Sixties and has invested 15-20 million crowns during these years.

--England. Owns shares in six blocks. Will apply also for the seventh round. Participated in the very first oil finding in the North Sea (non-commercial). Has found gas, the Ametist field, which is not yet in production. Is going to drill this summer (with Government grants).

SALENS. Prospecting together with Keman Nobel and Swedish Match in the sea off the Philippines. A very large concession - 15,000 square kilometers (compared to Norwegian blocks of 500 and British of 250 square kms).

--The Philippines. The three Swedish companies have invested 35-40 million crowns. Gas has been found in one place. The possibilities for production are now being examined. May become an offshore ammonia-urea plant or an electric power plant. Further drillings are planned.

--Turkey. Has prospecting rights together with Scandinavian Trading and the Turkish petroleum company TPAO in the north-eastern corner of the Mediterranean. Seismic investigations are in progress.

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Both SP Exploration and Volvo intend to apply for grants from the oil prospecting fund. This will mean that the balance of the fund, at present approximately 100 million crowns, will rather quickly be exhausted. Then the Government will have to face a problem, which it probably welcomes: to increase the financing of Swedish oil prospecting.

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